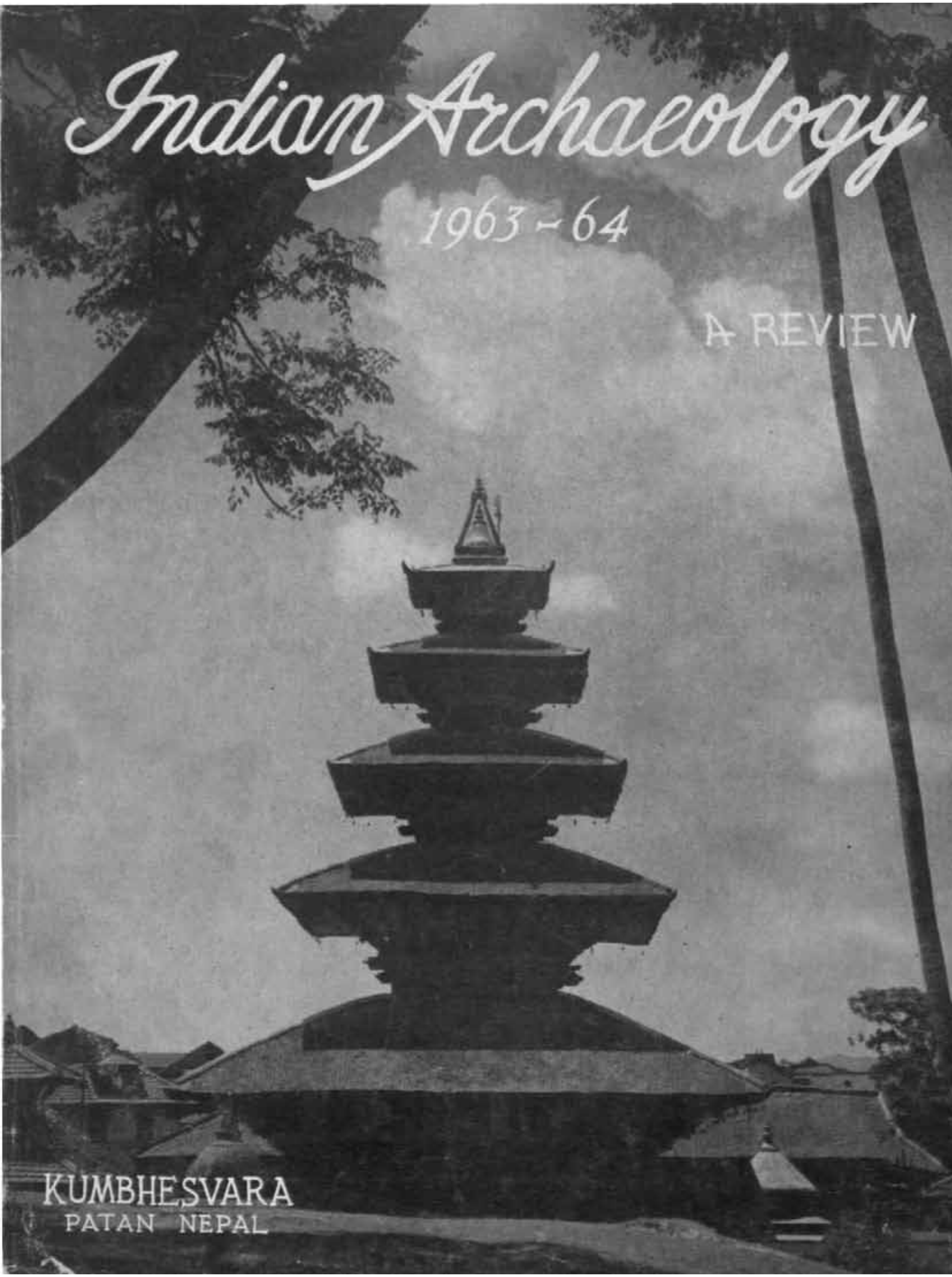
Indian Archaeology

1963-64

A REVIEW



INDIAN ARCHAEOLOGY 1963-64
—A REVIEW

EDITED BY
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I thank my colleagues and staff in the Archaeological Survey of India for their help in editing the *Review* and seeing it through the press.

New Delhi :
The 21st March 1967 A. GHOSH

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INDIAN ARCHAEOLOGY 1963-64

—A REVIEW

I. EXPLORATIONS AND EXCAVATIONS

ANDHRA PRADESH

1. EXCAVATION AT POCHAMPAD, DISTRICT ADILABAD.—With a view to salvaging the antiquities from the area likely to be submerged by the dam across the Godavari, the Department of Archaeology, Government of Andhra Pradesh, under Shri Mohd. Abdul Waheed Khan, conducted a small-scale excavation at Pochampad. In the course of preliminary exploration, cairn-circles, cists and a rectangular platform, perhaps for exposing the dead body, were located on the right bank of the Godavari. As a result of excavation, three burials were exposed. One of these, marked by a double circle of stones on surface, showed a 1-8-m. deep pit, rectangular on plan and with a north-south orientation. Within the pit and at different levels were found pottery of the megalithic Black-and-red Ware and all-black and red wares. Besides, iron objects comprising lances, javelins, daggers, sickles and cross-strapped hatchets were also obtained.

Surface-exploration nearby also yielded microliths including parallel-sided blades, points, lunates, etc. .

2. EXPLORATION IN DISTRICT CHITTOOR.—Dr. K. D. Banerjee of the Prehistory Branch of the Archaeological Survey of India[1], assisted by Shri M.V. N. Krishna Rao and Shri B. P. Bopardikar explored Early and Middle Stone Age sites, with a spread of various types of tools, in the conglomerate hills near Sivasankarapuram. During their exploration, they discoyerd a cave and two rock-shelters near Vembakhandiga, with Early Stone Age tools in the vicinity, and also re-examined the rock-paintings near Ubbaracheruvu, in Nagalapuram hills, discovered earlier by Shri A. V. N. Sharma of the Government Museum, Madras. The paintings, rendered in white pigment, depict scenes of dancing and riding on horse-backs. With their style far removed from the other rock-paintings of India, they do not seem to be of any antiquity and may in fact be tribal. Early and Late Stone Age sites were also brought to light in the vicinity of Ubbaracheruvu, and along a nullah.

Shri M. L. K. Murty of theDeccan College.Post-graduate and Research Institute, Poona, explored the river Rallakalava around Vedullacheruvu, 4 km. north-west of Renigunta on Kalahasti Road. The site was later visited by Professor H. D. Sankalia, Dr. V. N. Misra and Shri S. N. Rajguru. Tools of the Early and Middle Stone Ages were found in the loose gravels as well as from well-defined river-sections and those of the Late Stone Age from the top of the river-terraces. The river-sections showed three cycles of deposition: (i) well-cemented pebbly gravel overlain by a thick deposit of red

1 The Archaeological Survey of India is referred to in the following pages as the 'Survey'.

silt, yielding rolled tools of the Early Stone Age; (ii) loose pebbly gravel laid up against the earlier one and capped with yellow silt, yielding a mixed industry of the Early and Middle Stone Ages; and (iii) recent.

The Early Stone Age tools were made of quartzite, worked both unifacially and bifacially and included rastrocarinates, choppers, cleavers, scrapers and handaxes ranging from crude to very fine in form. The Middle Stone Age assemblage, dominated by scrapers, indicated the use of fine-grained quartzite as the raw material. Late Stone Age tools, of the non-geometric type, were made of crystal-quartz.

3. EXPLORATION IN DISTRICTS GUNTUR AND MEDAK.—The Department of Archaeo logy, Government of Andhra Pradesh, under Shri Mohd. Abdul Wahecd Khan, explored the sites of Kundamotu and Guddimalkapur lying respectively in Districts Guntur and Medak. At the former site, located nearly 64 km. from Guntur, on the road to Macherla, was discovered a square brick shrine containing an oblong panel carved with six figures in bas-relief resembling the Nagarjunakonda sculptures. From the latter site were obtained a hoard of one hundred and seventy-one gold coins, including two of Aurangzeb and others pagoda and half pagoda, besides some stucco and red-slipped pottery.

4. EXCAVATION AT DHARANIKOTA, DISTRICT GUNTUR.—In continuation of the previous year's work *(Indian Archaeology* 1962-63-A *Review*[1] p. 1), the South eastern Circle of the Survey, under Shri M.Venkataramayya, assisted by Shri K. Raghavachari, resumed excavation at Dharanikota. With a view to correlating the deposits of the channel-embankment with the habitational strata as also to confirming, on the southern side, the navigational channel with its brick revetment, exposed earlier on the western side, two cuttings, labelled respectively DKT-2 and DKT-3, were undertaken this year. Besides, the last year's trench (DKT-1) was further extended on the eastern half.

At DKT-1, most of the phases of the make-up of the fort-wall, as exposed on the western half (pl. I), were recorded on the eastern half as well. A noteworthy variation, however, was observed in Phase V, which on;the eastern half alone showed an important structural activity in the form of reinforcement of the inner side of the embankment with laterite blocks sealed by layers of rubble stones. Traces of occupation over the revetments in the shape of storage-jars and small vases were also attested.

At DKT-2, it was observed that the same laterite ridge as at DKT-1 underlay the occupational strata. The upper deposits in this cutting showed a slopy tendency, perhaps resulting from water-logging or from the formation of a reservoir-embankment. The existence at this place of a water-reservoir called Hamsala-Gundam, which in course of time got filled up, lends support to this belief. The occurrence of pots in tilted position in the same deposit would also point to the same inference. The site, therefore, marked the existence of a bund. Associated finds from these deposits included: an assortment of glass objects; sherds of the Rouletted and Northern Black Polished Wares and all-black and red wares.

Cutting DKT-3 (fig. 1) was laid across the southern wall of the rectangular fort-wall. The excavation in the southern half confirmed the existence of the brick-revetment along its internal side. The laterite blocks behind the revetment marked the inner revetment of the navigation-channel as at DKT-1. Some of the structural phases, as recognized in DKT-1, were also available here. The occurrence of a single post-hole

1This publication is referred to in the following pages by the year only.

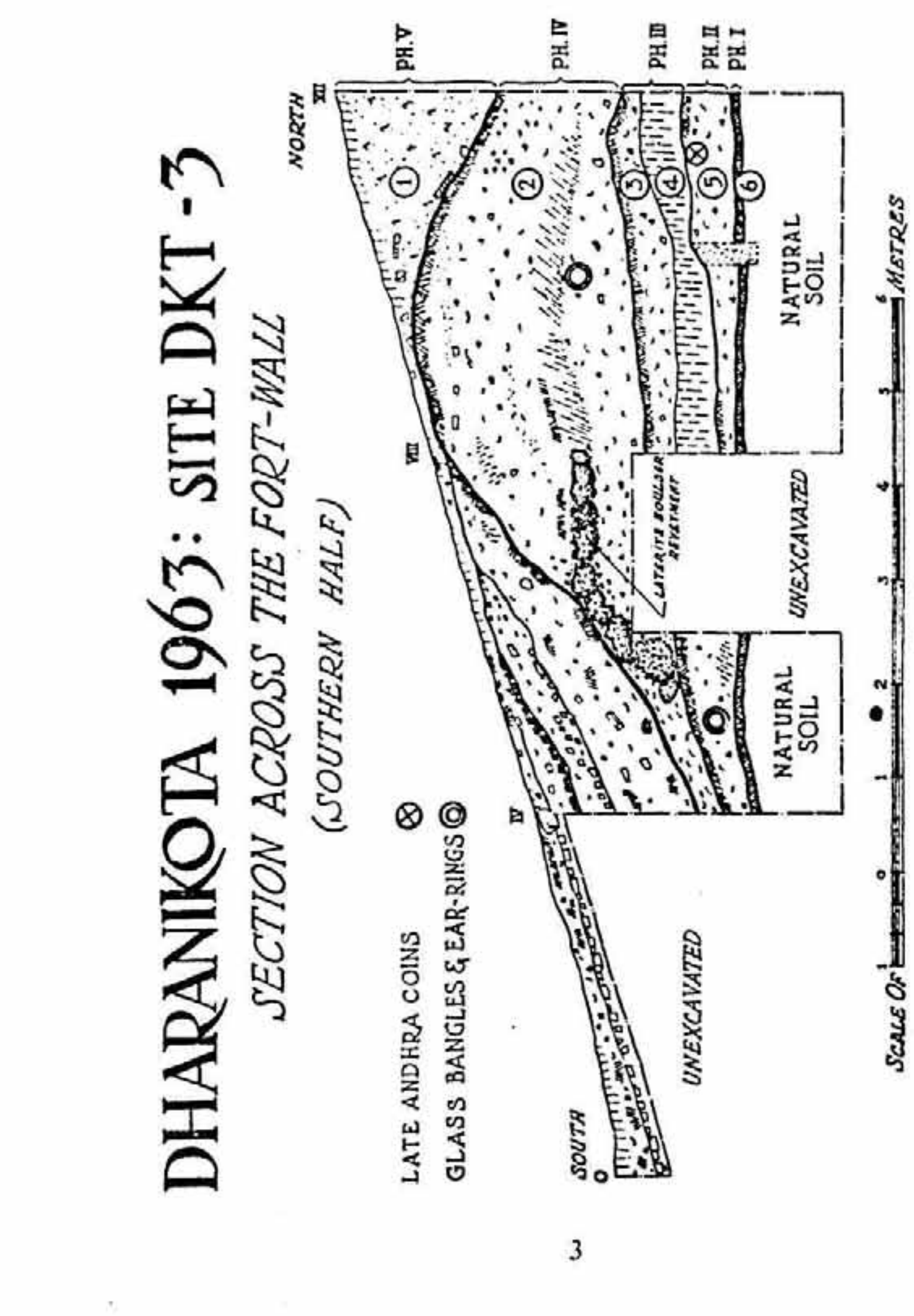

DHARANIKOTA 1963: SITE DKT-3
SECTION ACROSS THE FORT-WALL
(SOUTHERN HALF)
LATE ANDHRA COINS
GLASS BANGLES & EAR-RINGS
SOUTH
NORTH
PH.V
PH.IV
PH.III
PH.II
PH.I
LATERITE BOULDER REVETMENT
UNEXCAVATED
UNEXCAVATED
NATURAL SOIL
NATURAL SOIL
SCALE OF METRES

FIG. 1

confirmed the existence, also on this side, of a wooden wharf abutting the navigation-channel.

In the strata of Phases I and II, the megalithic Black-and-rcd Ware was found in abundance, the deposits of the latter Phase also yielding fine glass bangles, in mottled chocolate and black colours, and perhaps imported through oceanic and riverine trade. The initial date of Phase I could reasonably be placed in the beginning of the second century B.C.

5. EXPLORATION IN DISTRICT KURNOOL.—In continuation of the previous year's exploration (1962-63, p. 2), Shri I.K. Sharma of the South-eastern Circle of the Survey exploied the following ancient sites: (i) Jambuladinne, yielding the Rouletted and Russet-coated Painted Wares; (ii) Gaddamankampalli, yielding a broken neolith, micro-lithic fluted cores, blades and waste flakes, black-painted red ware and Middle Stone Age tools; (iii) Mettupalle, yielding neolithic ground stone axes, microlithic fluted cores, finished ribbon-flakes on chert, jasper and quartz, black-painted red ware and the megali thic Black-and-red Ware; (iv) Mittapalli, yielding the Rouletted and Russet-coated Painted Wares; (v) Nilugondla, yielding black-painted red ware and the megalithic Black-and-red, Russet-coated Painted and Rouletted Wares; (vi) Sivavaram, Taluk Banaganpalli, yielding neolithic ground stone axes, microlithic fluted cores, blades on chalcedony exhibiting the crested guiding-ridge technique, black-painted red ware, burnished grey ware and the megalithic Black-and-red Ware; (vii) Vemulapadu, yielding microlithic flakes, fluted cores, black-painted red ware and the megalithic Black-and-red and Russet-coated Painted Wares.

6. EXPLORATION IN DISTRICT MEDAK.—In continuation of the previous year's work (1962-63, p. 2), Shri M. Sivayya of the South-eastern Circle of the Survey discovered microlithic sites at Buhiramdibba, Chevalla and Pothalguda in Taluk Andol. Medieval temples were also noticed by him at Lonikalam.

7. EXCAVATION AT YELESWARAM, DISTRICT NALGONDA.—The Department of Archaeology, Government of Andhra Pradesh, under Shri Mohd. Abdul Waheed Khan, resumed its third season's work at Yeleswaram. This year's excavation, essentially confined to the temple-complex, uncovered a large part of the *memdapa* plan.

On the low-lying land on the western side of the temple-complex a trench, sunk to a depth of 1-3 m., exposed just below the Ikshvaku deposits a gravel layer yielding Early and Middle Stone Age tools.

At Kishapuram, on the slope of the Mallagutta hill, about 600 m. from the temple, another megalithic site was located. Sherds of the megalithic Black-and-red Ware and iron objects were recovered from one of the excavated burials.

ASSAM

8. EXPLORATION IN DISTRICT GARO HILLS.—In course of his exploration Professor M. C. Goswami of the Department of Anthropology, University of Gauhati' found near Rongram two broken pieces of ring-stones and a bone, besides seventy-five celts of various shapes.

9. EXCAVATION AT DAOJALI-HADING, UNITED DISTRICT OF MIKIR AND NORTH CACHAR HILLS.—The Department of Anthropology, University of Gauhati, under Professor M. C. Goswami, assisted by Shri T. C. Sharma, resumed (1962-63, p 3)

its work at Daojali-Hading in the Mupa Forest Reserve near Langting. Neolithic tools, bones and pottery were recovered from the excavated strata. A sequence of neolithic culture of the Jhum cultivators was revealed by the artefacts.

BIHAR

10. EXPLORATION IN DISTRICT BHAGALPUR AND SAKTAL PARGANAS.—The Department of Ancient Indian History and Archaeology, University of Patna, under Dr. R. C. Prasad Singh, found microliths of the geometric type at Ambarpur, Dhala-Taur, Hainchula, Kurmahat, Lagba and Rajapokhar in District Bhagalpur and at Buddhudih, Bheladih, Chawdhridih, Chorda-dih, Dabur, Dubar-Kunda, Dumar, Gholajuri, Ghor-alash, Indapahari, Kankershola, Karnakolajore, Khutiya, Madhuban and Tepra in District Santal Parganas.

Other finds from these sites included : a broken mace-head from Dubar-Kunda; a few pieces of stone vessels from Bheladih, Dubar-Kunda and Dumar; and sherds of the black-and-red ware from Lagba, Amtabad, Bheladih, Dabur, Dubar-Kunda and Khutiya.

Early Stone Age tools, represented by handaxes, scrapers and waste flakes were recovered from a pebble deposit m the bed of the river Karnakolajore in the suburb of Deoghar. Tools of the Middle Stone Age, such as scrapers, points and waste flakes, were found at the estuary of the river Kotania near Jasikir.

11. EXCAVATION AT ANTICHAK, DISTRICT BHAGALPUR.—In continuation of the previous year's work (1962-63, p. 3), the Department of Ancient Indian History and Archaeology, University of Patna, under Professor B. P. Sinha and Dr. R. C. Prasad Singh resumed their work at Antichak.

This year's excavation brought to light two distinct structural periods with a sub-phase in the latter. The earlier of these was represented by a five-course brick wall, unassociated with any find, and the latter by three terraces, circumambulatory path, chamber, antechamber and the main body of the *stupa.*

The floor of Terrace I was made of rammed earth and that of Terrace II of brickbats. Terrace III was badly disturbed leaving no trace of the original flooring.

The circumambulatory path, 2.90 m. in width, consisted of a plastered flooring and was separated from the antechamber by a hemispherical brick construction plastered over with sand and lime.

The antechamber had also a plastered floor, with the plaster showing red pigment. One of the walls of the antechamber also bore thick stucco plaster. Two stone pillar-bases were found on the floor.

The chamber was entered from the antechamber by means of a rectangular door of black stone, to the left of which two brick pillars, one of them moulded, were found. Inside the chamber was a brick-built pedestal covered with plaster, which in turn bore designs of lotuses with stems made out of clay. On the pedestal was found a huge clay image of Avalokitesvara, seated cross-legged. The image unfortunately was badly disturbed and broken above the belly. Below the navel of the image could be seen traces of painting, representing a circular design in red pigment. To the right of the image was found an inverted lotus-like brick structure covered with plaster. Likewise, on the left of the image was a circular pillar-like structure. A water-outlet for the chamber was located in the north-western corner.

To the east of the chamber stood the western wall of the main *stupa,* the western face of which still retained traces of plaster.

The whole structural complex seems to have been destroyed by fire. Overlying the debris of this destruction was noticed a new building-activity. The original door was blocked by a brick wall and a new entrance, approached by brick staircase, was provided above this blockade. Three risers of the stairway were found *in situ.*

The finds recovered from the debris included terracotta plaques representing human, animal and bird figurines, an iron spearhead and a stone bead.

In addition to these, part of the north-eastern quadrant of the mound was also excavated. Gearance-work brought to light the circumambulatory paths on the terrace running between the northern and the eastern chambers. This circumambulatory path was enclosed by the walls of Terrace II and was provided with window-like ventilators. Furthermore, a door on the eastern wall and a side-entrance on the northern wall were also associated with it. On the floor of the circumambulatory path were found terracotta plaques, representing Buddha in *bhumisparsa-mudra, milhuna* figures, elephant, horse, etc., and a broken figure of Buddha in black stone.

Four terracotta sealings were recovered from a pit resting over the wall of Terrace I. Three of them read *sri-Vataparata,* while the fourth is blurred and still remains to be deciphered. Terracotta plaques representing various scenes such as Buddha in meditation, lady in toilet, riders, etc., were found fixed on the walls of Terrace II.

The associated pottery belongs to a non-descript class of red and grey wares. Most of it is covered with a thick coat of lime which obscures its true fabric including decorative designs, if any.

12. EXPLORATION IN DISTRICTS GAYA, RANCHI AND SIKGHBHUM.—Lala Aditya Narain of the Department of Archaeology and Museums, Government of Bihar, found in the course of his exploration: (i) an inscribed stone *prasasti* in a village called Aiyara in Jehanabad Sub-division of District Gaya, dated in Saka era 1097 (A.D. 1175) and composed by a Kayastha poet, Dharesvara, son of Mahesvara, a resident of Magadha; (ii) a Surya image of dull-red stone with nine horses on the pedestal in a temple, of the twelfth-thirteenth century, on a hillock locally known as Tanginath's temple at Chainpur in Gumla Sub-division of District Ranchi; and (iii) microliths at Bighatoli and Kochedega in Simdega Sub-division of District Ranchi and at Bholadih, Chewra and Doran in the eastern region of Jamshedpur in District Singhbhum.

13. EXCAVATION AT CHTRAND, DISTRICT SARAN.—Dr. B. S. Verma of the Department of Archaeology and Museums, Government of Bihar, working under the direction of Professor B. P. Sinha, continued (1962-63, p. 6) excavation at Chirand. This year's excavation confirmed the already-established threefold culture-sequence with a significant modification, necessitated by the occurrence of iron in the top deposits of the earliest Period. Period I, therefore, is now sub-divided into Sub-periods I A and I B.

Sub-period I A, showing three occupational levels, was distinguished by the occurrence of the white-painted black-and-red ware (pl. II A) along with microliths and a restricted use of copper. Other associated ceramic industries comprised plain and painted black ware and a few pieces of steel-grey and red wares. Noteworthy forms (fig. 2) included: the dish-on-stand, some with corrugated stems; the long-necked jar; the lipped bowl; the basin; the bowl; the perforated vessel, sometimes four-legged; the lipped jug; the trough; and the dish. The last two types were generally found painted showing groups of dashes of wavy or straight lines. The vases were also sometimes painted on the shoulder and neck, the designs being rendered in creamish-white pigment.

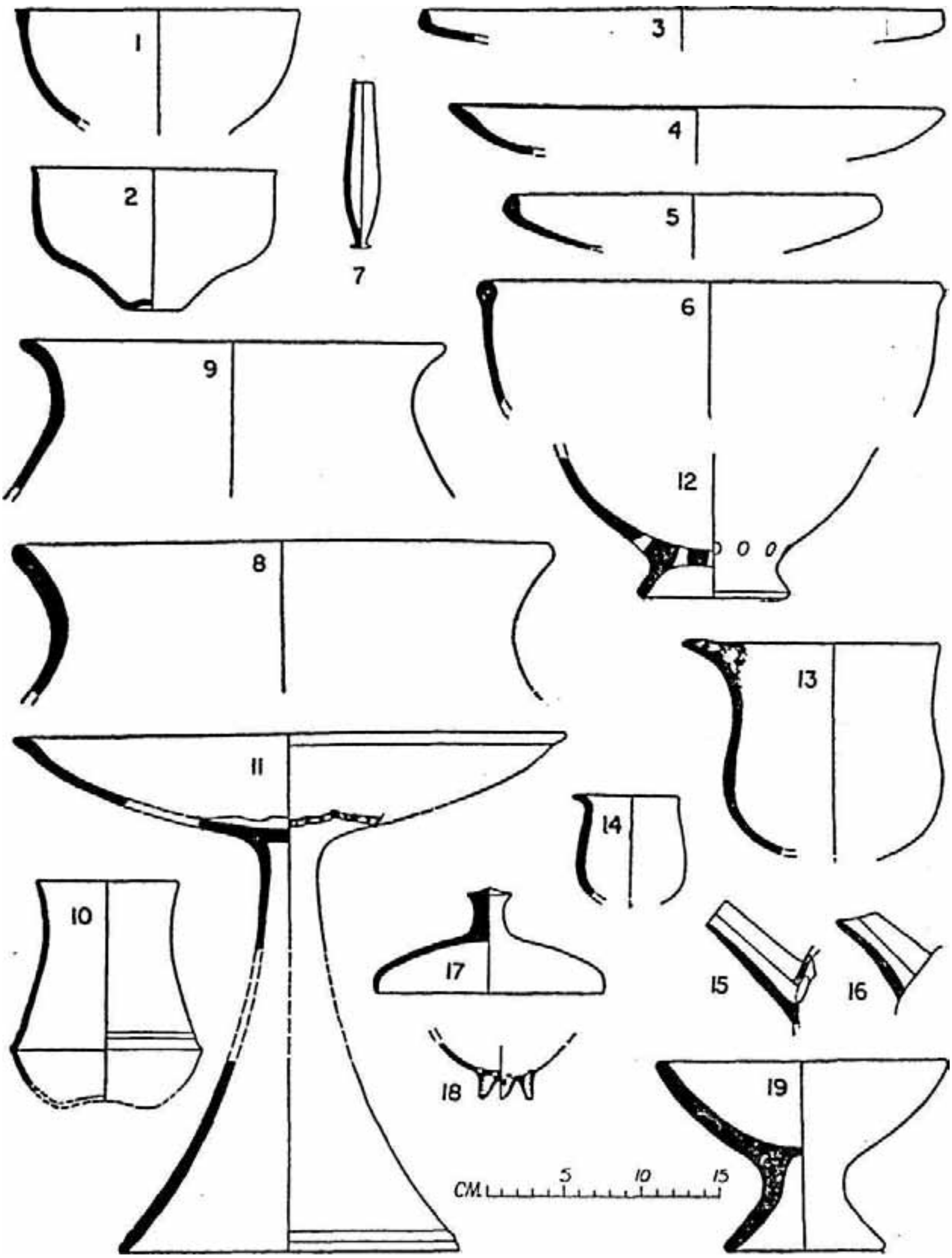


FIG. 2. ***Chirand* : *representative pottery, Sub-period IA***

Other finds of the period included beads of terracotta, mostly pear- or *ghata*-shaped, and of chalcedony and bone arrow-heads of both tanged and socketed variety, circular or square in section. A large number of animal bones and charcoal pieces were found from the various floor-levels of the Sub-period.

Period I B was characterized by the occurrence of iron objects in the top layer, the assemblages of the previous Sub-period otherwise remaining unchanged. The association of iron with this milieu remains to be checked by further excavation. Among the finds mention may be made of a broken terracotta bird, exhibiting the 'punch' technique. It may be recalled that this Sub-period was not identified last year.

Period II was marked by the emergence of the Northern Black Polished Ware in varying shades of black, silvery grey and blue. The black-and-red of the previous Period, however, continued. No structural remains were encountered in this Period. Noteworthy finds included a *naga* figure in terracotta, a few copper coins, heavily corroded and found from the topmost level and a solitary ground stone celt (pl. II B).

Period III was represented by a red ware of medium to coarse fabric. The N.B.P. Ware and the black-and-red ware of the previous Period were completely absent. Noteworthy among the patent forms was the sprinkler. Five phases of structural remains (pl. Ill) relating perhaps to Buddhist monasteries were also identified in the deposits of this Period. The last two phases were shoddy, mostly rebuilt with the brick-bats of earlier structures. Broken terracotta tiles, found associated with the early phases, indicate the use of tiles as a roofing-material for these structures.

The associated finds included: terracotta figurines with markedly foreign traits of the Kushan period (pl. IV A); terracotta plaques (pl. IV B), both triangular and square, representing different symbols and figures; a terracotta standing nude male figure, broken from midriff, probably a Jaina monk; objects of ivory, bone, copper (pl, II Q iron, stone, glass, etc.; and a dozen heavily-corroded Kushan coins.

14. EXCAVATION AT BUXAR (CHARITTARVAN), DISTRICT SHAHABAD.—Lala Aditya Narain of the Department of Archaeology and Museums, Government of Bihar, under the general direction of Dr. B.P. Sinha, undertook excavation at Buxar, locally known as Charittarvan.

Excavation revealed four cultural Periods at the site; the earlier three were continuous and the last following an abandonment of the site after Period III.

Period I was represented by red, black and grey wares, the principal types represented being the basin of coarse variety, conical bowl, and dish in red ware, bowl with an internally-knobbed base and a dish in black ware and bowl and dish in grey ware. Among the noteworthy finds of this Period mention may be made of four animal and two human (female) figurines (pl. V A). On the animal figurines representing elephant, ram and horse were seen three horizontal strokes painted in yellow colour on the leg, back and tail. The occurrence of such painted terracotta figurines in a horizon earlier than the Northern Black Polished ware is observed for the first time. The female figurines also indicated an archaic style shown by the incised eyes, pinched nose, punched ear-lobes and perforations over the head probably for the decoration of hair.

Period II was marked by the presence of the N.B.P. Ware along with red, black and grey wares. A new shape, represented by a lipped bowl in red ware, also made its appearance in this Period. Amongst other finds, terracotta female figurines (pl. V B), sealings bearing the symbols of the punch-marked coins, bone points, copper antimony-rods, beads of semiprecious stones, terracotta ear-studs and iron implements are worth

noting. The female terracotta figurines were, however, entirely different from those of the familiar Maurya and Sunga periods. These figurines had special types of head-dresses with different designs; faces were elongated and the ornaments on the body were not so heavy.

Period III showed the use of ceramics of the early Christian era, represented in such forms as the sprinkler, carinated and flanged *handi,* spouted vase, bowl with tapering sides, lid-cum-bowl and vase. A long wall, measuring 6 m. in length, perhaps part of a large hall, was also brought to light. Terracotta human figurines with typical Kushan headdresses, sealings, beads and iron objects constituted the important finds of this Period.

Period IV, which followed after a break in occupation, was represented by the occurrence of the medieval glazed ware showing the typical floral designs and a common red ware represented by such utilitarian forms as the bowl with ring-base, plate, carinated *handi,* etc. Several small structures, made of broken re-used bricks of the previous Period, were also found. Apart from these, a gold armlet weighing 252 grammes, eighteen silver coins, variously of Jahangir and Shah Jahan, moulded human heads, glass bangles and iron implements were also recovered.

15. EXCAVATION AT BARUDIH, DISTRICT SINGHBHUM.—Under the auspices of the Department of Anthropology, the University of Calcutta, Professor D. Sen and Shri A. K. Ghosh, further explored some parts of the Sanjay valley near Sini, and, in continuation of their previous field-work (1962-63, p. 6), excavated a few new trenches at Barudih. Excavation revealed the following sequence, from bottom upwards: (i) a thick deposit of archaeologically sterile red soil; (ii) compact dull-black soil rich in artefacts; and (iii) a thin mantle of reddish-brown soil, possibly a wind-borne deposit. The red soil at the bottom is characteristic of the surrounding land-surface, which at some places yielded microliths.

Stone axes and adzes, mainly chipped, and smoothed and round-butted, were found to occur at depths between 40 and 90 cm. below surface. Besides celts, other important finds included: charcoal; burnt earth; fragmentary animal-bones; hollow earthen balls ; and potsherds. Charcoal and potsherds were present almost throughout the whole depth of this stratum. The pottery was both hand-and wheel-made and was represented in grey, orange-brown and black wares. It did not, however, show any pattern of distribution with reference to depths. Among identifiable shapes were the bowl and dish.

In the gullies of the slope were found similar implements and pottery deposited perhaps by the process of erosion of the mound, while on the surface of the mound itself occurred some broken and weathered iron pieces and non-descript beads.

GUJARAT

16. EXPLORATION IN DISTRICT KAIRA.—The Maharaja Sayajirao University of Baroda, under Professor R. N. Mehta, explored the following sites in Taluk Cambay: Mitli on the left bank of the river Sabarmati, yielding microliths; Vallabhi, yielding Roman amphorae, conch bangles, etc. ; Kapadvanj, an iron-smelting centre of the medieval period; and Delmal, showing a tank with an earthen dam of the medieval period.

17. EXCAVATION AT NAGARA, DISTRICT KAIRA.—The Maharaja Sayajirao University of Baroda, under Professor R. N. Mehta, conducted a small-scale excavation at Nagara, Taluk Cambay. A cutting, 14 X 4 m. in area and sunk to a depth of about 15 m., revealed four Periods of occupation.

Period I (seventh-third century B.C.) was represented by black-and-rcd, plain and burnished red wares. Of the structural remains an artificial embankment was exposed; its exact purpose could not be properly determined due to the limited nature of the dig.

Period II (third century B.C. to the beginning of the Christian era) was marked by the advent of the Northern Black Polished Ware. Arrow-heads, points, chisel-like objects of bone (pl. VI A), a punch-marked coin, bangles of conch, terracotta figurines including a mother-goddess (pl. VI B), beads and iron slag constituted the remains of this Period.

Period III (first-ninth century A.D.) was distinguished by the emergence of the Red Polished Ware, Roman amphorae, burnished black ware, a non-descript micaceous ware and crude black-and-red ware. Beads of glass, terracotta and semiprecious stones, iron knives, blades, arrow-heads, copper coins, bells, gold foils, silver and lead coins, stone images, pestles, numerous fragments of conch bangles and terracotta seals and sealings showing a cow and a calf were obtained from the deposits of this Period. The structural remains of the Period comprised mud-floorings, a wall of brick-bats and a large hearth.

Period IV (fifteenth century A.D. onwards), which followed after a lapse of some six centuries, was represented by the occurrence of the medieval glazed ware, black and red burnished pottery and half-round tiles, characteristic of the Period.

18. EXPLORATION IN DISTRICT KUTCH.—Shri K; V. Soundara Rajan located a number of Middle Stone Age sites on different streams in northern and southern Kutch, two of them being very rich in tools including microliths. The general stratigraphy of the other sites in the Ratadia village-limits (at about 71 km. on the Bhuj-Lakhpat road on the Khari nullah, off Mathal on the left bank of the river Dhrud, near Beta on Wamoti-Maliya road on the Miti river and near Desalpur on the river Dhrud) showed two gravels, of which the lower was fairly well-hardened and had a doleritic content, while the upper terrace consisted of a loose spread of quartzite and silicious flakes and fragments. The stream-beds also contained doleritic shingle which, however, did not yield any tools. The upper terrace which contains loose gravel and silt is indeed the horizon of the Middle Stone Age tools. The tool-types included flake-blades, scrapers, cores, points, etc. It is noteworthy that the dominant raw material was quartzite, apart from chert, agate and jasper, and would speak for the cultural continuity between the Early and the Middle Stone Age assemblages here.

19. EXCAVATION AT DESALPUR (GUNTHLI), DISTRICT KUTCH.—The Western Circle of the'Survey, under Shri K. V. Soundara Rajan, excavated the Harappan site of Desalpur (Gunthli), located in Taluka Nakhtrana. Surface-explorations in Kutch in the past had already indicated the potentialities of the site for that sequestered area. The excavation confirmed its basic Harappan affiliation by the find, apart from pottery, of two script-bearing seals, one on steatite and the other on copper, and a lettered terracotta sealing. That they were all available in the middle to upper levels of the Harappa culture proper would itself seem to have its own significance. Besides, the presence of mud-brick plat forms, in direct association with the preponderant, partially-dressed, stone structural medium, the occurrence of triangular terracotta cakes, typical ribbon-flakes, jasper weights, animal figurines, beads of the segmented and gadrooned varieties, apart from other known forms, and painted and unpainted pottery, proclaim its direct relationship with the Harappan civilization.

The ancient site of Dcsalpur is of modest dimensions (130 X 100 m.), and is located on the northern bank of the once depredatory stream, Bamu-Chela, an affluent of the river Dhrud, which it joins not far away from the present site. Excavation revealed a 3-m. deep cultural deposit, of which the upper three quarters of a metre belonged to the early historical period, assignable to the Rang-Mahal complex of Rajasthan or its regional variant of 'Vasai' ware of northern Saurashtra. This was separated culturally and stratigraphically from the preceding protohistoric complex. Thus, two broad cultural periods were determined. Period I was further subdivided into Sub-period IA as mature Harappan and Sub-period I B as late Harappan.

An important element in the configuration of the site was a massive stone fortification (pl. VII) with a basal width of 4 m., and rising to an extant height of 2-5 m. The fortification-wall was reinforced with corner towers and salients. The north-eastern corner, however, showed an additional feature of a mud-brick filling in the shape of a platform, between the outer and the inner stone veneer-wallings. The stone blocks of the veneer were often of substantial dimensions, a particular lowest-course block being a regular beam of more than 3 m. in length and 1 m. in height. The width of the mud-brick platform at the north-east corner was of the order of a little less than 3 m. The use of mud-bricks (50 X 25 X12.5 cm.) was attested in the houses inside the town as well. In the present extent of the excavation, it was not possible to determine the location of the gateway to this fortified town. Surface-indications, however, reveal that it could be either on the eastern side or on the now completely-removed southern side. For the habitation inside the town, it was noticed that many houses were built against the fort-wall itself. Towards the central part of the town, a structural complex, partially exposed, showed massive walls with regular foundation-offsets and spacious rooms. While three structural phases were recognized for Sub-period I A, no such phase was determined for Sub-period I B.

The associated pottery presents certain special characteristics. While undoubted forms and types of the mature Harappa culture were no doubt present, it was observed that the range of painted designs of the figural as well as vegetal motifs, and the occurrence of such forms as the beaker and goblet, was much restricted. The designs were often simpler and included: multiple horizontal bands; loops and wavy lines; hatched double triangles of squares with pulled-out corners; double rows of alternately-chequered oblongs; carefully-executed honeycombs; and animal figures like a deer looking forward. A note-worthy feature of the ceramics was the occurrence, almost at the lowest level, and in association with the Harappan pottery, of a thin grey ware, carefully potted and painted in bluish-green pigment with wavy lines of irregular as well as regular rhythm on the outside of the vases. These sherds, though not profuse, were consistently present in many trenches and had also been noted from the lowest levels of Mohenjo-daro, where they were described as 'glazed ware'. Their presence at Desalpur is, therefore, significant. This painted pottery continued in the few subsequent strata until, by Sub-period I B it was replaced by a coarse grey fabric showing essentially horizontal lines of bluish or reddish-brown pigment on its mat exterior surface. This painted pottery shows some links with Lothal A, Phase II, and Somnath I B.

While Sub-periods I A and I B show a cultural continuity, the latter was distinguished mainly by a cream-slipped bichrome ware, represented essentially in the dish-and bowl-forms with slightly-everted rim and mildly-convex profile. The painted designs were executed in black or purple and reddish-brown on the upper part of the bowl and comprised such motifs as vertical wavy lines, concentric semi-circles, vertical lines, etc. In some cases, the painting was only in one pigment, and was rendered on the interior

lower part also. Another innovation of this Sub-period was the use of plain as well as grey-painted black-and-red ware, represented mostly in blunt-carinatcd dishes or bowls with or without flat base and occasionally also showing the 'paring' technique on the exterior. The painted black-and-red ware showing typical oblique slashes on the interior rim-zones seems to have its analogues from Ahar I B. An interesting diagnostic pot-type, occurring both in Sub-periods I A and I B, was the handled saucepan wherein the handle, unlike its analogues from Lothal, Rangpur, Rojdi, etc., was of channelled section and with a deliberately-curved top for a firm grip. This occurred from the mid-Harappan levels onwards and became particularly profuse in Sub-period I B, the type, however, being absent in the lowest levels of Sub-period I A. It is interesting to record that the typical Lothal type of saucepan-handle in the micaceous red ware was also met with in the upper levels of Sub-period I A. The exact diffusion of this type, therefore, requires close investigation. Typical Harappan pottery like the dish-on-stand, cylindrical perforated jar, carinated lid, handled cup, goblet, ring-stand, etc. were commonly available, particularly in the lower levels.

The Lustrous Red Ware was totally absent at the site, and would, therefore, seem to indicate that no post-Harappan occupation, comparable with Rangpur II C or III, existed here.

Other finds from these levels included : terracotta triangular cakes (pl. VIII A); animal figurines; gamesman with ram-head; terracotta bangles; terracotta beads; beads of faience and paste showing segmented, gadrooned, cylindrical and disc shapes; copper objects including knives, chisels, rods and rings; jasper and terracotta weights; chert ribbon-flakes; almond-shaped points and arrow-tips on chalcedony, one of them being an attenuated core preserving fully the crested guiding ridge along one of the margins; spherical stone balls of different sizes; saddle-querns and pestles; polished celts; and cartwheels and frames (pl. VIII A). The most noteworthy finds were the script-bearing seal (pl. VIII B) and terracotta sealing (pl. VIII C). From a comparative study of the material it would be reasonable to assign a time range of *circa* 2000-1600 B.C. for Period I.

The structures of Period II were found perched on the topmost extant courses of the fort-wall, which had long since ceased to be of any functional use or interest. Roughly-dressed rubble stones as well as well-quarried slabs of shale or slate were employed for the construction of the houses as in Period I. It is obvious, however, that the inhabitants of Period II had pilfered their building-material from the exposed structural debris and re-utilized it in a rough and ready manner. The associated pottery represented in red- and cream-slipped wares often showed painted designs in black.

20. EXCAVATION AT LANGHNAJ, DISTRICT MEHSANA.—With a view to restudying its archaeological content, excavation was resumed at Langhnaj under a joint auspices of the University of Poona, the Maharaja Sayajirao University of Baroda and the Department of Archaeology, Government of Gujarat. In one of the cuttings a complete human skeleton measuring 1.62 m. in length was found lying extended in an east-west direction. From the other cuttings a number of bones, both human and animal, were recorded. Besides, a copper knife, measuring 30 cm. in length and 2.6 cm. in width, was found at a depth of 95 cm. in one of the cuttings. It is noteworthy that copper was found for the first time at this site.

21. EXPLORATION IN DISTRICT SURAT.—Shri D. B. Chitale of the Western Circle of the Survey collected Middle Stone Age tools, re-examined by Shri K. V. Soundara

Rajan, from Balitha, Lavachha, Namdha and Tukwada in Taluk Pardi. They were invariably large, with limited secondary working except at the functional edge, the raw material used being invariably mottled chert or cherty quartzite. The legion undoubtedly calls for a detailed investigation as it would appear to reveal incipient Middle Stone Age characteristics in a manner not revealed in any other zone so far. The complete absence of any clear-cut vestiges of the Early Stone Age would also seem to indicate that it is clearly a Middle Stone Age assemblage, involving a changed environment.

22. EXPLORATION IN DISTRICT SURENDRANAGAR.—Shri K. V. Soundara Rajan of the Survey discovered an Early Stone Age site on the banks of Dokamardo nullah, about 2.40 km. from Halvad on Halvad-Dhrangadhra road. This is the second Early Stone Age site reported from Saurashtra, the first being at Rojdi on the Bhadar. The tool-assemblage, the raw material for which was cherly quartzite, indicated an advanced Acheulian fades, with an entrenched presence of the 'prepared-platform' technique. Tools of Middle Stone Age, made both on chert as well as jasper, were collected from this site.

KERALA

23. EXPLORATION IN DISTRICT ALLEPPEY.—Shri K. Chardrasekhara Mer.on of the Southern Circle of the Survey found a stone sculpture of Buddha in *dhyana-mudra* at Karumadi. Mural paintings in vegetable-colours were found at Mannacherry Siva temple in Aryad North village.

24. EXPLORATION IN DISTRICTS CALICUT, ERNAKULAM, TRICHUR AND TRIVANDRUM.—Shri N. M. John of the Deccan College Post-graduate and Research Institute, Poona, explored : ruined and deserted temples at Talakkulathur, locally known as Matilakamkshetram and Kudathumpailkshetram, in the Padinjathummuri-Amsam, District Calicut, the *garbha-griha* of the latter containing an icon of Paryati in *padmasana* pose, and carvings of the Chola style on the four walls; and an extensive urn-burial site at the village Chengamenad, Taluk Alangad, about 11.26 km. south-west of Angamali, District Ernakulam. Scores of urn-burials were exposed while pits were being dug for rubber plantation. The urns yielded numerous iron implements like axes, swords, but no bones. Two caves, exposed by stone-cutters, at Chundel near Kunnamkulam, Taluk Talappilli, District Trichur, were also noticed by him.

25. EXPLORATION IN DISTRICT KOTTAYAM.—Shri K. Chandrasekhara Menon of the Southern Circle of the Survey found menhirs, one of laterite at Tirunakkara and four of granite at Athirampuzha. The average height of these stones was about 3 m. He also located cairn-circles on the Vedagiri hill at Athirampuzha and dolmens at Kanakari and Kuravilangad.

Fine specimens of wood-carvings, depicting scenes from the Epics and the *Puranas* were noticed at : Brahmamangalam-Siva temple at Chembu village; Bhagavati temple in Cheruvally; Arpukara-Subramanya temple at Kaipuzha; Thaliyil-Siva temple at Kottayam; Vaikom-Siva temple at Naduvila; Trippakudam-Siva temple at Talayaz-ham; and Udayanapuram-Subrahmanya temple at Vedakkemuri. Mural paintings in vegetable-colour were also noticed at some of these temples. A few medieval sculptures were noticed at Kuruchi and Changanacherry.

MADHYA PRADESH

26. EXPLORATION IN DISTRICTS HOSHANGABAD AND NARSINGHPUR.—Dr. Z. D. Ansari, Shri S. N. Rajguru, Shri S. C. Supekar and Dr. (Mrs.) G. Karve of the Deccan College Post-graduate and Research Institute, Poona, explored the river Narmada and its tributaries between Hoshangabad and Narsinghpur and made a large collection of Early and Middle Stone Age tools found *in situ* along with fossil-bones of the *Bos, Elephas, Hippopotamus* and other unidentified animals from the Pleistocene deposits. They also carried out small-scale excavations at Rati-Karar-Kalan on river Sher and at Saguna-Ghat on the river Narmada. From the observations made at various places, the Pleistocene stratigraphy of the Narmada appears to be as follows (from bottom upwards) :

(1) Boulder-conglomerate. Neither the laterite nor the red silt with *kankar* was found to occur below the boulder-conglomerate. The latter yielded both Abbevillean and Acheulian tools (rolled as well as fresh) along with a few middle Pleistocene fossil animal bones. At Hoshangabad and Hasalpur, a few Middle Stone Age tools were picked up from the upper parts of the boulder-conglomerate, while in the excavation at Mahadeo-Piparia, fresh Middle Stone Age tools *in situ* were collected up to a depth of 2.48 m. from the top of the boulder-conglomerate.

(2) Red silt with *kankar* which yielded no implements and fossils.

(3) Unconformably overlaid well-cemented sandy gravel which gradually passed into cross-bedded sands. A few Early Stone Age tools and a large number of Middle Stone Age tools along with fossil animal-bones were recovered from the well-cemented sandy gravel and some Middle Stone Age tools and a large number of fossils of the *Bos, Hippo* and *Elephas* were collected from the cross-bedded sands.

(4) Conformably overlaid yellowish-brown silt with *kankar* from which no tools or fossils were collected. The top of this silt has weathered to brown earth and forms a terrace-surface at an average height of about l9.81 m. from the water-level in dry season. A few microliths were recovered from this weathered zone.

(5) The sub-recent black-brown silt and sand from a lower terrace appearing to rest against the Pleistocene deposits.

27. EXPLORATION IN DISTRICT RAISEN.—The Department of Ancient Indian History, Culture and Archaeology, University of Saugor, explored the rock-shelters in the locality around Ramachhajja, situated on the right bank of the Reechhan nullah, about 4.82 km. from Raisen on the Raisen-Bhopal road.

Four rock-shelters with paintings were located. The paintings represent various scenes with animals, shown singly or in rows. The bodies of animals were indicated in outlines, occasionally also filled in with lines or dots. The identifiable animals included the bison, boar, rhino, stag, elephant and leopard. A few animals which could not be precisely identified showed long thick bodies, prominent legs and hairy necks and tails. One of the curious figures depicted a double-mouthed animal. Besides, some human figures were also seen, singly or in rows, standing hand-in-hand or hunting animals with bows and arrows or seated on animal-backs or dancing. Four colours, light or faded red, deep-red, yellow and white, were used for the rendering of these paintings. Superimpositions were noticed at several places.

28. EXPLORATION IN DISTRICT REWA.—See below, pp. 38 and 39.

29. EXCAVATION AT ERAN, DISTRICT SAGAR.—In continuation of the previous year's work (1962-63, p. 11), the University of Saugor, under the direction of Professor K. D. Bajpai, assisted by Shri U. V. Singh, carried out further excavations at Eran.

Of the five trenches sunk during this year, named ERN-13 to ERN-17, only one was dug down to the natural soil, the remaining four being undertaken essentially to ascertain the limits of the chalcolithic habitation. Besides, work was also resumed in cuttings ERN-4 and ERN-7 (Ext.) largely with a view to obtaining a complete cross-section across the defence-wall.

At ERN-4, excavation revealed that the small mud-bund had resulted from the levelling of the ground by the inhabitants; the moat was created by the flow of rain-water from the fields, the slope of the fields being towards the river-side.

At ERN-7 (Ext.), where a moat and a mud defence-wall, built in the late phase of the chalcolithic occupation, had already been identified last year, trial-trenches at regular intervals revealed that the fortification-wall with a basal width of 48.52 m. had two structural phases, both assignable to the chalcolithic period. Initially, the defence-wall had a basal width of about 30.48 m. and was separated from the moat by 15.34. m. This gap was subsequently joined with the wall, bringing its total basal width to 45.82 m.

Cuttings ERN-13, 15, 16 and 17, taken up at the slopes of the main mound in different directions, revealed that the chalcolithic occupation did not reach the river. At ERN-16, on the eastern end of the main mound, were noticed dumps of loose yellowish clay mixed with enormous pottery and other finds belonging to the chalcolithic occupation. Underlying this dump and standing immediately over the natural soil was found a pit containing ash and burnt clods of clay. This dump perhaps represented some sort of a bund against the river in that direction.

Cutting ERN-14, situated almost in the heart of the present village, proved useful in confirming the sequence of different cultures, already known from ERN-2 and ERN-7, besides being rich in burnt brick structures of the historical period. The cultural equipment of the various periods was as follows:

Period I, chalcolithic in nature, was characterized by the presence of painted pottery (pl. IX), microliths (pl. XA) and copper. On the basis of pottery this Period could be further sub-divided into early, middle and late phases. White black-painted red, grey (sometimes also painted) and white-painted black-and-red (pl. IX B) wares occurred throughout these three phases, the introduction of a ware with deep-red slip and shining surface and the appearance of the channel-spouted vase distinguished respectively the middle and late phases of the Period.

In the black-painted red ware a few additional motifs were noticed, the dominant motifs being geometrical. Among the animal-designs mention may be made of dogs, stylized antelopes,. a goat-like animal and some indeterminate ones. A few sherds also bore incised decoration. The grey ware, occasionally also showing black inside and grey outside, was represented by jars and bowls, the painted motifs in this ware not being different from those of its associated black-painted red ware. In the white-painted black-and-red ware graffito-marks were also noticed on some sherds. Noteworthy was the occurrence of the channel-spouted vase in this ware. Whether the black interior of the spout was accidental or intentional cannot, however, be definitely determined due to the fragmentary nature of the spout. In the deep-slipped red ware, assignable to the middle phase of the Period, the shapes represented were usually jars, painted designs being confined to simple horizontal bands, often alternating with wavy lines. The channel-spouted vases, characteristic of the late phase of the Period, were occasionally

painted in black on both the exterior and interior surfaces and, with a single exception, were represented only in the red ware.

Other finds of the Period included: beads of terracotta, carnclian, steatite, shell, jasper, agate and paste; terracotta animal figurines (pl. X B); a circular copper object; stone rings and querns; pottery discs; and numerous microliths including cores. The last-named industry, besides the predominant short parallel-sided blades, also included lunates, trapezes, points and pen-knife-blades. The find of a neolithic celt (pl. X C), from the topmost layer of the Period, is consistent with the earlier surface-exploration (1960-61, pl. LXXII).

Period II A was marked by the introduction of iron and the occurrence of the plain black-and-red ware, different in shape and fabric from the one noticed in the preceding Period. Previously, one sherd of the Northern Black Polished Ware was found from the topmost layer of this Sub-period. This season's work indicated the occurrence of this celebrated Ware in two more earlier layers, it being absent in the lower levels of this Sub-period. A few sherds of black-painted red ware, akin to those of Period I, and perhaps stray, were also found. Other finds of this Sub-period included: miscellaneous objects of terracotta, iron and copper, besides a few microlithic blades and flakes; three stone objects, one in green jasper and two in red, used perhaps as weights; early punch-marked coins from the middle and late levels; and a crude terracotta human figurine of an archaic type. While no structural remains were found, brick-bats and tile-pieces, occurring throughout the Period, indicated their use as building-and roofing-material.

Sub-period II B was marked by the gradual disappearance of the black-and-red ware of the preceding Sub-period and the innovation of the red ware. A few sherds with stamped designs were also found. Punch-marked coins, terracotta animal and other figurines, copper and iron objects and beads of different material continued. A floor made of rammed burnt brick-bats associated with two ring-wells belonged to this Sub-period.

Period III was associated with the Red Polished Ware. From this phase were obtained several coins of the Western Kshatrapa and Naga rulers, various beads, objects of iron and copper and miscellaneous terracotta objects. One copper object, perhaps part of a sword, showed a carved elephant. Mention may be made of an important terracotta circular sealing containing an inscription in the Gupta characters, reading as *maha-danda-nayaka Simhanandi.* The discovery of this sealing of a *maha-danda-nayaka* at Eran throws valuable light on the importance of this town in the Gupta period.

Period IV was identified only in cutting ERN-14, where six structural phases of the Period, as already known from other trenches, were duly recorded. Plenty of lac and glass bangles and a few sherds of the medieval glazed ware of the late medieval period were collected from the various levels.

30. EXCAVATION AT BESNAGAR, DISTRICT VIDISHA.—The Central Circle of the Survey, under Shri M. D. Khare, undertook excavation at Besnagar, already famous for the Heliodoros pillar. Three cuttings, numbered BSN-1 to BSN-3, were laid out.

In cutting BSN-1 (pl. XI A), located on the confluence of the rivers Betwa and Bes, six Periods of habitation, ranging in chronology from prior to the Northern Black Polished Ware to post-Gupta times, were identified.

Period I yielded black-and-red and black-slipped wares along with plain red ware, animal-bones and iron objects.

Period II marked the appearance of the N.B.P. Ware, the frequency of which, however, was less and the sherds were mostly fragmentary. The black-and-red, black-slipped

and plain red wares of the previous Period also continued, plain red ware being the dominant ceramic industry. Besides various types of copper and iron objects, a number of other finds like terracotta beads, bone objects, terracotta votive tanks, stone pestles and querns, a collared copper bead, terracotta flesh-rubbers, punch-marked coins and a votive stone *linga* were also obtained from the deposits of this Period. The Period seems to have come to an end as a result of a conflagration, as seen by a uniform deposit of burning. Amongst the structures belonging to the Period mention may be made of an eight-course high baked-brick wall and some ring-wells.

Period III was distinguished by the use of the plain red, black-and-red and kaolin wares; marble objects; shell bangles; punch-marked coins; terracotta and stone beads; stone pestles and querns; and polished and burnt bone pieces. An inscribed stone seal, bearing an inscription reading *Nikumbha-ragasya(?)* in Brahmi characters of the Sunga period (pl. XII A), was recovered from the late levels of this Period. Of singular interest was a lamp of fine red ware, provided with a pinched lip.

Period IV is assignable to the Naga-Kushan horizon. The ceramic industry of the Period included a red ware, sometimes also painted in black and represented by sprinklers, and a red-slipped ware. Votive tanks, terracotta beads, ear-studs, gamesmen, flesh-rubbers and a few copper coins constituted the finds of this Period.

Period V yielded antiquities relating to the Gupta period. The earlier tradition of painted pottery continued, though in a restricted strain, while the incised, stamped and impressed decorative motifs (pl. XII B) became quite frequent. Noteworthy among the other finds of this Period were: a terracotta bottle-stopper; a silver coin; terracotta human and animal figurines; terracotta stamping pieces with multiple designs; and terracotta and incised shell bangles. A circular brick pavement, perhaps used for ritualistic purposes, was also brought to light. The site appears to have been deserted after this Period.

Period VI, which followed after a lapse of some centuries, was represented by some rubble walls, enclosing about half-a-dozen earthen pots containing animal bones. The material remains of the Period comprised: a copper coin and a fragmentary stone sculpture, both depicting a sword and a shield in the hand; terracotta beads; circular discs or weighing-objects; and grey ware (painted) along with a plain red ware.

Cutting BSN-2 was laid out on the right side of Vidisha-Ashokanagar road and revealed an occupational deposit belonging to Periods I to V, as determined above. No post-Gupta remains were identified in this cutting. The cultural equipment of the various Periods was the same as in cutting BSN-1. A few structures belonging to Periods IV and V were also exposed.

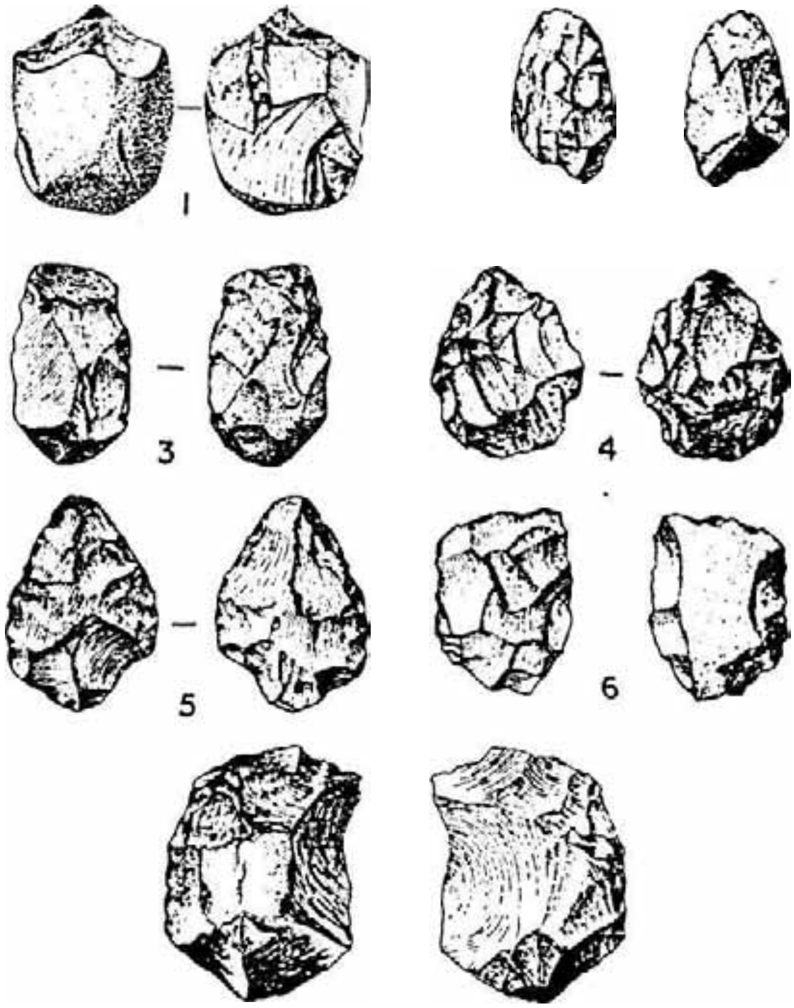
Cutting BSN-3 was laid out in the area of the Heliodoros pillar. Excavation brought to light remains of a huge temple, measuring roughly 30 X 30 m. About 2.40 m thick walls of the ancient structure, showing a collapse mostly on the outer sides (pl. XI B), were exposed. Associated with the structure were plain red ware, a few sherds of black-and-red ware, black-painted red ware and punch-marked coins, assignable to the second century B.C. A single sherd of the N.B.P. Ware was picked up from the black soil, underlying the ancient rubble structure. After this structure fell into disuse, the area was levelled up and remained unoccupied till the nineteenth century, of which period a coin belonging to A.H. 1296, issued by one of the Nawabs of Bhopal, was found. The latest phase of this structural activity continued till recent times.

MADRAS

31. EXPLORATION IN DISTRICT CHINGLEPUT.—-Dr. K. D. Banerjee, Shri M. V. N.

Krishna Rao, Shri B. P. Bopardikar and Shri M. U. Qurcshi, all of the Prehistory Branch of the Survey, and Shri Dilip Guha, of the Archaeological Section, Indian Museum, explored several Early and Middle Stone Age sites at Ammambakkam, Gollapalaiyam, Cunipalaiyam, Kammavaripalam, Kunjaram, Narayanpuram, Neiveli, Poondi, Raja-palaiyam, Sitenjeri, Thimmabhupalapuram, Uttukkotai and Vellattukota, all in Taluk Tiruvallur. They also re-examined the already-explored sites at Amritamangalam, Attram-bakham and Vadamadurai and collected a good number of Early and Middle Stone Age tools from the lateritic deposits as also from the surface.

Dr. R. V. Joshi, Dr. K. D. Banerjee and Shri M. U. Qurcshi explored an Early Stone Age site with Late Acheulian tools (fig. 3) from the north-east of Sriperumbudur, nearly 32 km. from Madras.



'CM.

FIG. 3. *Sriperutnbudur : Late Acfieulian tools*

The University of Madras, in the course of exploration in the District, surveyed ruined temples at Pallavapuram or Pallavaram, which, according to tradition, was an important place in the Pallava period, and Tirukkalimedu about 1.6 km. east of the

Kanchipuram town. On the plinth of the latter was noticed an inscription of Rajaraja II. Finely-executed images of Durga, Brahma, Dakshinamurti, the four Saiva saints, Indra and Buddha were found along with a fine set of bronzes of Umasahita and Kalyana-sundaramurti and an image of Chandrasekharamurti. At the former place panels of Jyeshtha and *sapta-matrikas* were noticed on the banks of a nearby pond.

33. EXCAVATION AT GUDIYAM, DISTRICT CHINGLEPUT.—With a view to investigat ing the Stone Age sequence in the peninsula, the Prehistory Branch of the Survey, under the direction of Dr. K. D. Banerjee, assisted by Shri M. V. N. Krishna Rao, Shri B. P. Bopardikar and Shri Dilip Guha, continued (1962-63, p. 12) excavation at Gudiyam. Three cuttings (pl. XIII), labelled GDM-1, GDM-2 and GDM-3, were made in the cave and the adjacent open fields on the slope. The excavation posed several problems relat ing to the stratigraphical succession of the laterite and pebbly gravel, the occurrence of former in different contexts being one of the most intriguing problems.

Excavation at GDM-1, while confirming last year's findings, further revealed that the tool-bearing horizon extended from the ancient floor-level of the cave to the top silty layers with a remarkable change of tool-types from the post-Acheulian including an unfinished handaxe in the lower pebbly gravel to the Middle Stone Age group in the upper strata. Owing to the scanty occurrences of these tools in the excavated deposits, it may be inferred that the occupation of the cave was only incidental, perhaps during periods of temporary exigencies.

GDM-2 was located near the Gudiyam village on the slope of the fields. Excavation revealed two layers, of which the upper was composed of loose brownish soil, and the lower of pebbly gravel with varying deposits of smaller and larger pebbles. Excepting at the bottom, where light-brownish clayey shale was observed, the pebbly gravel was throughout found mixed with lateritic reddish soil. The tools recovered from the lower depths bore a peculiar yellowish stain presumably due to contact with laterite or lateritic soil. Most of the tools were flakes with or without any working. Besides unfinished handaxes, cleavers, choppers and cores also occurred. The upper part of the pebbly deposit and the top layer yielded mixed types of tools including partially-worked flakes, points, scrapers, handaxes, cleavers and blades. It is, however, very difficult to know the actual horizon of each category of these, as the nature of the deposit suggested erosional activity.

GDM-3, located near village Srikrishnapuram, revealed an altogether different stratigraphy. One of the two sections exposed showed pellety lateritic soil mixed with pebbles down to 60 cm. underlain by a compact lateritic *morum* down to 1.25 m., the bottom of the latter deposit, owing to its contact with the whitish shale below, being yellowish, to a thickness of 30 cm. Tools of the Middle Stone Age were collected from the pellety lateritic soil along with those of the late Acheulian type. The latertic *morum* on the other hand yielded only late Acheulian tools. The lower deposits of this reddish lateritic *morum,* including the yellow-stained portion and the underlying shale did not yield any tools. The tool-assemblage included points, flakes (small), scrapers, discoids, cores, choppers, handaxes and cleavers—all finely worked on quartzite pebbles in mint-condition. The other section revealed two layers, of which the upper was composed of brownish silty soil and the lower of a very thick pebbly gravel. Post-Acheulian tools were collected from both these deposits.

34. EXPLORATION IN DISTRICT NORTH ARCOT.—Shri S. R. Rao of the Southern Circle of the Survey discovered a neolithic site at Thalatapamalai near Paiyanampalli

village in Taluk Tirupathur, District North Arcot. A preliminary survey of the site brought to light six rock-shelters and three terraces with occupation-debris yielding the grey ware and ground stone axes, pounders, querns, mullers, mace-heads and several other stone artefacts. The neolithic folk apart from inhabiting the rock-shelters, which in some cases are as deep as 15 m., also lived in open-air sites at the foot of the hills and on the terraces.

35. EXCAVATIONS AT KAVERIPATTANAM, DISTRICT THANJAVUR.—The Southern Circle of the Survey, under Shri S. R. Rao, assisted by Shri K. V. Raman, resumed (1962-63, p. 13) excavation at Kaveripattanam, an important port of the early Cholas. Trenches were laid at Vanagiri, Pallavaneswaram, Kilaiyur and Manigramam.

A brick structure (pl. XIV), almost semicircular on plan, with nearly 2-m. high walls and an internal diameter of 8 m., laid bare at Vanagiri, appears to be a small water-reservoir fed by a 83-cm. wide brick-built inlet-channel from the river Kaveri. Since the structure is badly damaged by brick robbing, its full plan could not be traced. The earthen bund of the lake was also partially exposed. It is interesting to note that the brick structure shows moulding produced by the chamfered and rounded edges. The channel seemed to have a corbelled roof. The occurrence of the megalithic Biack-and-red and the Rouletted Wares in layers contemporary with the structure helps to determine its date, which may be fixed around first-second century A.D. In this connexion it may be noted that the early Tamil Sangam literature refers to the construction of tanks and irrigation-channels by the Chola kings.

A massive brick structure was also laid bare in a locality known as Pallavaneswaram. As it was not fully exposed, its complete plan and function could not be determined.

Some trial-pits were also sunk in Kalaiyur site to ascertain if any structures similar to or associated with the landing pier, exposed last season, could be identified. Except stray bricks nothing could be found, confirming thereby that all the ancient remains have since been removed in the course of agricultural operations.

At Manigramam, a few trial-pits yielded: the Rouletted Ware in grey, pink and black fabrics; the megalithic Black-and-red Ware; terracotta figurines; collared beads; and a square copper coin with a standing tiger on one side and an elephant on the other. These finds are suggestive of the occupation of the site in the beginning of the Christian era.

36. EXPLORATION IN DISTRICT TIRUCHCHIRAPPALLI.—The Department of Ancient History and Archaeology, University of Madras, explored both banks of the river Kaveri within the limits of this District and located sites with: (i) the megalithic Black-and-red Ware and urns at Kottaimedu, Kattupputtur and Puttur; (ii) the Russet-coated Painted Ware at Arasalpur and Kottiamaidu; (iii) the megalithic Black-and-red Ware at Attur, Malaikkovilur, Muttanchalli, Nattamedu, Punnam and Villiyanai in addition to the sites mentioned under (i) and (ii); (iv) stone circles at Chinna-mettukkali; (v)late pottery at Kundanipalaiyam; and (vi) a mud-fort at Muttachatti.

37. EXCAVATION AT ALAGARAI, DISTRICT THUCHCHIRAPPALLJ.—The Department of Ancient History and Archaeology, University of Madras, conducted excavation at Alagarai, located on the northern bank of the river Kaveri, about 45 km. to the west of Tiruchchirappalli in Taluk Musiri.

Five trenches, laid out in different parts of the mound, were excavated to the natural soil. Excavation confirmed the cultural sequence obtained at Tirukkambuliyur (1962-63, p. 14). The deposits, varying from 2 to 6 m. in thickness, revealed three cultural Periods.

Period I was characterized mainly by the occurrence of the painted and plain sherds of the Black-and-red and Russet-coated Painted Wares, and a variety of bright and black polished wares. The painted designs on the Black-and-red Ware consisted of a variety of patterns including vertical and oblique strokes, wavy lines, diamonds, loops and lattices. On some of the sherds of the Russet-coated Painted Ware the painting was executed also on the interior, the designs consisting mostly of horizontal or vertical bands, series of intersecting lines and a set of thick bands cut by another series at right angles. The Black-and-red Ware exhibited a variety of shapes ranging from simple bowls to long-necked jars with round profile. There were a few pieces of dishes-on-stand with slots on thehollow stem similar in type to the incense-burners found at Maski. A few sherds of the Black-and-red and Russet-coated Painted Wares bore interesting graffito-marks.

Other finds from this Period included shell bangles, beads of shell and glass, terracotta beads and ear-ornaments. In the lowest levels, a large number of beads in shell with their shape similar to the barley-grains were found. The occurrence in the lowest levels of some disintegrated brick-bats indicated the existence of some structural activity during the Period.

Period II, essentially a continuation of Period I, was represented by a diminishing quantity of the Russet-coated Painted Ware and an increase in the quantity of red ware with medium and coarse fabric. A crude variety of the Black-and-red Ware, however, persisted. While the white barley-like beads, which had predominated in the earlier Period, completely disappeared in this Period, new innovations in the shape of glass and paste beads, bangles of glass and shell, terracotta toys and figurines made their appearance. Besides, a few copper coins ascribable to the early medieval period were also found in the strata belonging to this Period. A noteworthy find in the early levels of this Period was an inscribed sherd of the Black-and-red Ware. The inscription is on the exterior and bears three letters in the Brahmi script reading *ku ta ta*, being part of the name *Kuttan* (meaning a 'dancer' in Tamil). These Brahmi letters are similar to those inscribed in the early caves of Tiruchchirappalli, Madurai and Tirunelveli Districts and the potsherds found at Arikamedu; and as such may be ascribed roughly to the first century A.D., if not earlier. On another potsherd of the Russet-coated Painted Ware a thinly-scratched Brahmi letter *ku* was noticed.

From the above showing it would be seen that Period I came to an end roughly by about the first century A.D. While its beginnings cannot be determined with certainty, an initial date around third or fourth century B.C. may not be inconsistent with the geaeral sequence in the peninsula.

Period III was marked by the occurrence of a red ware, both of the slipped and un-slipped variety. Besides, an ill-fired red ware was also present. The Black-and-red Ware and all-black ware occurred in a diminishing quantity, largely as a result of disturbed strata and pits. Of the finds, shell objects became rarer, the remaining finds of the previous Period continuing as usual. A copper coin belonging to the Vijayanagara period was found in one of the trenches. Period III may, therefore, be taken to fall between the early medieval and late Vijayanagara periods. No evidence of structural activity was observed in Periods II and III.

MAHARASHTRA

38. EXPLORATION IN DISTRICTS AKOLA AND AMRAOTI.—In the course of her exploration, Dr. (Shrimati) Shobhana Gokhale found two silver Kshatrapa coins at Washim and a stone inscription of the Vakataka king Devasena dated to *samvat 380* at Hisse-Borla in

District Akola. The inscription records the construction of the lake Sudarsana by Svamilladeva, *ajnakara* of Devasena, and thus provides fresh evidence for fixing Vakataka chronology on a sound basis (see below, p. 72). In District Amraoti she found : (i) rock-shelters and temples of the Yadava period at Salbardi; (ii) Middle Stone Age tools at Dhamantri on the bank of the river Wardha; and (iii) sculptures of Siva, Vishnu and Parvati of early medieval period at Talegaon.

39. EXPLORATION IN DISTRICT CHANDA.—In continuation of the previous year's work (1962-63, p. 15), Shri L. K. Srinivasan of the South-eastern Circle of the Survey explored a wide area in the basins of the rivers Wainganga and Wardha and located many sites on the latter river. Characterized by implement-bearing gravel-bed, exposed and eroded by the action of the river, they yielded tools of the Early and Middle Stone Ages. At Paraspatar, besides Early and Middle Stone Age tools, microliths were also found. The site is situated 12.87 km. south-east of Chanda on the bank of Gaontideo nullah near Paraspatar. The tool-assemblage included points and blades, besides ridged flakes, burins, scrapers, lunates, drills and double- and single-platform cores. Chert, rock-crystal, jasper, carnelian and chalcedony were the common rock-material used in the manufacture of tools.

Shri Srinivasan further explored a chalcolithic site near Marda (1959-60, p. 31), where two black-painted red ware sherds were picked up. Megaliths were also noticed by him less than 1 km. east of Hirapur in Tahsil Warora.

40. EXPLORATION IN DISTRICT DHULIA.—Shri S. A. Sali of the South-western Circle of the Survey during the course of his exploration in Taluk Sakri noticed a cliff-section at Mhasdi on the river Panjra and recovered Middle Stone Age tools from the lowest gravels, flakes on jasper and agate from the middle gravel and a blade of agate from the upper gravel. He located : (i) Middle Stone Age sites yielding cores, scrapers, points and flakes mainly on jasper at Dhamnar, Ganeshpur and Nilgavan ; (ii) Late Stone Age sites yielding microliths on chalcedony and agate at Darkhel, Deghave, Kakan-pada, Nilgavan, Pratapur, Umbharti and Umbhre ; (iii) chalcolithic sites at Chinchkede, Dar khel and Nadse ; (iv) temple-ruins assignable to *circa* twelfth and thirteenth centuries at Bahad, Chail, Ganeshpur and Pratapur; and (v) sites with remains of the Mughal and Maratha periods at Chinchkhede and Pratapur.

41. EXPLORATION IN DISTRICT POONA.—In continuation of his last year's work 1962-63, p. 15), Shri S. N. Rajguru of the Deccan College Post-graduate and Research Institute, Poona, further explored the Mula-Mutha and Bhima rivers and discovered Middle Stone Age sites near Chande, 19 km. west of Poona, and at Dhand on the river Bhima, 78-85 Km. east-south-east of the latter site. At the latter site a large number of Middle Stone Age tools *in situ* were collected from a 2.43-m. thick fairly compact sandy gravel, capped by yellowish-brown silt with *kankar.*

42. EXPLORATION IN DISTRICT SATARA.—In continuation of his previous work (1962-63, p. 16), Shri R. S. Pappu of the Deccan College Post-graduate and Research Institute, Poona, thoroughly re-examined, for a stratigraphical check-up, sections on the Krishna river for a stretch of 64.37 km. from its source near Mahabaleshwar to Mahuli. The present examination confirmed previous observations of two cycles of aggradation and erosion by the river. Each cycle consisted of gravel and silt. This deposition was found to be regular and must have stretched for a considerable distance.

The gravels of the two phases were of quite different nature. The first one was pebbly at most of the places and bouldery at others, especially in the upstream region. The gravel of the second phase was comparatively fine and sandy and occasionally exhibited cross-bedding. Likewise, the silts of the two phases also showed difference in texture and colour and were clearly demonstrated at Mahuli and Pachivad.

MYSORE

43. EXPLORATION IN DISTRICTS BELGAUM, BIJAPUR AND GULBARGA—Shri R. S. Pappu of the Deccan College Post-graduate and Research Institute, Poona, explored the valleys of the Krishna river and some parts of the Ghataprabha river, a tributary of the former, in Taluk Athani in District Belgaum and Taluks Bagalkot, Bagewadi, Bilgi and Jamakhandi in District Bijapur.

Early and Middle Stone Age tools were collected at the following sites : Asangi, Hipparagi, Jainpur, Kolhar, Mundagnur, Padasalgi, Roli, Sangam, Sitimani and Yelgur on the Krishna river and Anagwadi, Birkhubbi, Honihalli, Kadampur, Kuvalli, Salgundi, Sindagi and Yedhalli on the Ghataprabha river.

The Early Stone Age tool-assemblage included Acheulian handaxes, cleavers, dis-coids, flakes, cores and a few pebble tools, while the Middle Stone Age tool-assemblage consisted of scrapers, points, borers, flakes and cores.

It was observed during the survey that most of the sites of the Early Stone Age were located in the vicinity of Kaladagi inliers. Quartzite of Kaladagi formations in preference to other raw material was thus favoured by Early Stone Age man in preparing his tools. The raw material used in the preparation of Middle Stone Age tools was the fine-grained chalcedony.

Shri A. Sundara of the Deccan College Post-graduate and Research Institute, Poona, in the course of his explorations noticed megalithic dolmens at Ashte, Kalkhamba and Muchandi in Taluk Belgaum. At the latter two sites traces of habitation were also found as evidenced by the surface-find of the megalithic Black-and-red Ware and coarse-textured red ware.

At Dyaganhatti and Konnur in Taluk Gokak, he located neolithic-chalcolithic sites. The latter site possibly represented an ash-mound. Characteristic grey, blackish-grey and pinkish-buff wares, some micaceous and some with incised decorations, flakes of black-trap, parallel-sided blades of chalcedony, chert fragments of slick stones, saddle-querns of granite and bones were recovered from the surface of the mound. The occurrence of finely-retouched lunates, a trapeze and a small piece of black-painted red ware of the Jorwe fabric are noteworthy.

At old Belgaum near Madhavapur, sherds of the Black-and-red and Russet-coated Painted Wares, two lead coins with indistinct legends in Brahmi script of the first-second century A.D. and a glazed gadrooned bead were recovered from the trenches laid by brick-robbers.

In District Gulbarga, Shri Sundara found : cairns at Shahabad ; cists at Mandewal ; a dolmen at Kondapur ; stone circles at Mandapur ; megalithic habitation-sites at Ra-khamgeri, Tabbidi and Vinhuthija ; and neolithic-chalcolithic sites at Harnur, Ijheri, Mandewal, Sangwar and Tadbidi.

44. EXPLORATION IN DISTRICT BELLARY.—Dr. Z. D. Ansari of the Deccan College Post-graduate and Research Institute, Poona, discovered a painted Kannada inscription

at the entrance of a rock-shelter on the granite hills to the south of the village Tekkalakota. Palaeographically the inscription can be dated to the tenth-eleventh century A.D.

He also explored the river Tungabhadra within the limits of the District and discovered at Nittur, 5 km. west of Tekkalakota, many highly-mineralized fossil-bones of the *Bos* along with Early Stone Age tools of the Sohan type, mostly made on basalt, as also Middle Stone Age tools.

Shri M. S. Nagaraja Rao located a large number of rock-shelters on the granite hills around Tekkalakota. Some of the shelters contained rock-paintings depicting hunting-expedition preceded by a community-dance.

He also discovered an inscription on a huge boulder at the foot of the hill in the locality called Bale-tota. The record is dated in Saka 943 (A.D. 1021) and mentions the high qualities of one Brahadiraja, a *danda-nayaka*, and registers a grant of land of black soil to Kalyanadeva, a local deity.

45. EXCAVATION AT TEKKALAKOTA, DISTRICT BELLARY.—As a part of his research on the chalcolithic cultures of the Deccan and north Karnatak, Shri M. S. Nagaraja Rao, working under the direction of Professor H. D. Sankalia of the Deccan College Post-graduate and Research Institute, Poona, undertook a small-scale excavation at Tekkalakota, 43.45 km. north of Bellary.

Of the nineteen neolithic settlements located on the granite hills to the south of the village, two localities, designated TKT-1 and TKT-2, were tapped. In the latter area a small trench revealed seven well-plastered floor-levels. One of the sectons in TKT-1, excavated to a depth of 1 '23 m., revealed a 1-m. deep cultural deposit belonging to two Periods.

Period I was characterized by the use of ground stone axes and chalcedony and chert blades. The ceramic industry comprised hand-made ashy grey, burnished grey, both plain/and ochre-painted and buff wares. The common shapes included spoutedand globular vessels with funnel-shaped rims, bowls, plain and with pinched lips, and a goblet. Among other finds recovered from the corresponding strata mention may be made of gold ornaments (ear-ornaments or pendants), bone tools, beads of steatite and semi-precious stones and a copper axe.

The houses were circular on plan (about 5.5 m. in diameter) as evidenced from the post-holes. Two fractional burials were encountered in the red *morum*, only the skull and the long bones being buried in south-north orientation. In one case, however, bones belonging to three individuals were recorded, indicating a community-burial. In another case, where only one individual was involved, a fine goblet of ashy grey, ochre-painted at the edges, was also found placed to the left of the skull, perhaps as a funerary offering.

Period II was distinguished by the paucity of the ash-grey and ochre-painted wares. The burnished variety, however, persisted. The new element introduced in this Period was the orange or dull-red ware and a negligible quantity of black-and-red ware, used exclusively for burial-purposes. Wheel-made black-painted red ware also made its appearance. The common shapes included the spouted vessel, urn, bowl of various dimensions and with multiple pinched-lips and perforated vessel. Ground stone axes and blades continued as in the previous Period. Except for a few copper objects like rings and wire, no other metal objects or tools were recovered.

The houses were circular on plan enclosing rectangular apartments. The inhabitants made the best use of the granite boulders, available in plenty, and used them to

support the periphery of the circular houses as is done even this day in the village. The floors were often plastered with lime.

The inhabitants of Period II practised extended burial. Children were either buried in urns or under the floor of the houses.

In the adult burials, which were oriented north-south, funerary furnishings in the shape of pottery were also provided. In one instance as many as seven pots were found, one of the three black-and-red ware bowls being painted on the interior with white lines recalling a similar bowl from a burial at Tekwada (1956-57, p. 18).

The occurrence of painted ware, particularly the white-painted black-and-red ware bowl, tends to show contacts between the chalcolithic cultures of the northern Deccan.

The deposits of Period II were found disturbed by water-logging and megalithic or early historical intrusion.

The results of the small-scale excavation being very rewarding, a large-scale excavation was carried out by the Deccan College Post-graduate and Research Institute, under the direction of Professor H. D. Sankalia and Dr. Z. D. Ansari, assisted by Drs. M. S. Mate, V. N. Misra and G. G. Majumdar and Shri S. N. Rajguru.

In TKT-1, 39 squares of 6.10 m. each were excavated, exposing horizontally the black soil corresponding to Period II, while in TKT-2 three squares were dug.

In TKT-1, excavation confirmed that the top layer was disturbed by water-logging and by megalithic or early historical intrusion. The ceramics included dull-red, burnished grey, black-and-red and a limited quantity of black-painted red ware. Ground stone axes, blades of chalcedony and chert, copper objects including bangles, fish-hooks, poker and wires, a gold ornament, terracotta toy-bull and a small axe and beads of steatite, semiprecious stones and terracotta constituted the finds from this Period. Mention must be made of a steatite cylinder bead retaining a copper wire in the perforation. A number of bone tools, mainly chisel-ends and points, were also recovered from the deposits of this Period. The houses were generally round, although square or rectangular structures were not wanting.

Eleven burials, oriented north-south, were found in a row, particularly on the northern side of the locality. Of singular interest was a four-pot burial within which were interred bones of an individual.

Cutting TKT-2 was dug vertically and revealed two cultural Periods. In the earlier Period remains of two houses with a lime-plastered mud-platform were outlined. Noteworthy finds from this area was a large quantity of charred grains, identified as horse-gram. Four flat-topped stones and remains of storage-bins indicated that the former served as rests for the legs of the latter.

In Period II, structures showing dwarf-walls of burnt daub and split bamboos were met with. The only one burial found in this Period was of an extended variety, oriented north-south. The finds recovered from the deposits, however, did not differ from those of TKT-1. Special mention may be made of a grey ware lid showing punctured decoration depicting the peacock, serpent, ibex and bull.

Cutting TKT-3, situated at the foot of the hill, locally called Gaudaramule, showed that the site was occupied from the neolithic times up to the early historical period. While the early levels yielded burnished grey and dull-red ware, the later deposits showed the use of the Russet-coated Painted and the megalithic Black-and-red Wares.

46. EXPLORATION IN DISTRICT DHARWAR.—Shri A. Sundara of the South-western Circle of the Survey, in the course of his exploration in Taluk Ron, discovered a megalithic

burial and habitation-site at the foot of the Somesvara hill on the Unachageri in Gaudageri area. Typical Black-and-red Ware was recorded. Numerous burials containing pots with fragmentary bones were observed in the sections of the nullah near by. Besides, a few cairn-circles were also located.

Shri A. M. Annigeri of the Mysore Department of Archaeology discovered early Acheulian implements at Benachamatti and in the fields between Vandhegolla and Jigeri.

Some temples and sculptures belonging to the time of the Kalyani Chalukyas were located at Hal-Hullur, Hirehal, Jakkali, Menasagi, Naregal, Nidugundi, Rajur, Ron, Savadi and Totaganti. The Narayana temple at Nidugundi showed standing images of Narayana, Lakshmi, Brahma and *Siva.-linga* installed on one and the same pedestal.

47. EXPLORATION IN DISTRICT MYSORE.—Shri C. Krishnamurthi of the Southern Circle of the Survey discovered a neolithic site at Yechangalli in Taluk Nanjangud and recovered ground stone axes and brown burnished hand-made pottery. Megalithic habitation-sites were also located by him at Alattur-Mole, Goudarahundi, Halre, Hebya, Kamballu, Ramapura and Uppinahalli in the same Taluk. A painted sherd with designs in black pigment was found at Kembullu. Megalithic burials of cairn and cists types were located at Chikkahundi and Hirikati in Taluk Gundlupet and Laxmanapura and Sind-huvalli in Taluk Nanjangud. An Early Stone Age handaxe was also picked up by him at Hebya.

48. EXCAVATION AT HEMMIGE, DISTRICT MYSORE.—The Department of Archaeo logy, Government of Mysore, under Shri M. Hanumantha Rao, conducted excavation at Hemmige, situated on the right bank of the Kaveri, 11 km. downstream from T. Narsipur.

Five cuttings were laid, two in an area just by the side of the village and three about 400 m. upstream on a small island behind a five-hundred-year-old dam called the Madha-vamantri anicut.

In the site near the village, two Periods of occupation were recognized. Period I was represented by seven pottery-groups, found just above the natural soil. Post-holes and clay floorings indicated the existence of mud-houses. Each pottery-group (pl. XV A) contained normally two or three pots covered with lipped bowls. One of the groups had a neck-rest, while another comprised a carinated vase with a somewhat long bulged-out neck and a straight spout rising from the edge of the shoulder, the pot being covered by a small bowl. The entire range of pottery was hand-made and was either rough or slightly burnished.

After a long gap of desertion, represented by deposits of wind-borne sand, the site was re-occupied in the early historical period. The ceramics consisted mostly of rough or slipped red wares and the Russet-coated Painted Ware, the usual shapes being large pots with thick rims, sometimes decorated, flat-bottomed vases, bowls and dishes. Other antiquities included glass and terracotta beads, bangles of glass and shell and iron objects including a spearhead.

The area on the island showed a single-culture occupation belonging to the chalco-lithic period. The associated pottery was hand-made, except in one trench where a few wheel-made pieces were found in the upper levels. The hand-made pottery consisted mostly of burnished wares, the common shapes being the globular pot with everted rim and the deep round-bottomed bowl with straight featureless rim. In the burnished pottery, black, red or brown was the normal surface-colour, the typical pale-grey being scarce. Some of the sherds bore paintings in red. Lipped bowls and neck-rests appeared throughout. The associated finds included : ground stone axes (pl. XV B);

spheroidal pounders; flat corn-threshers of quartz or granite; fluted cores and blades (pl. XVI A) of black chert and occasionally crystal ; a copper piece and a few spheroidal terracotta beads.

From the river-bank itself, a number of stone implements belonging perhaps to the Middle Stone Age (pl. XVI B) were collected.

49. EXPLORATION IN DISTRICT SHIMOGA.—Shri S. Nagaraju of the Mysore Archaeo logical Department discovered a number of sculptures, inscriptions and *viragals* ranging from the tenth to the seventeenth century A.D. in the area likely to be submerged by the construction of the Sharavathi Dam.

ORISSA

50. EXPLORATION IN DISTRICTS BOLANGIR, GANJAM AND KALAHANDI.—Shri S. N. Raghunath of the Prehistory Branch of the Survey carried out exploration in the southern parts of Orissa and found on the top of the laterite in the valley of the river Tel and its affluents microliths comparable to the *teri* industry. The explored sites included: Bolangir; Deogaon, Kumda, Lorkipalli, Maingaon, Nimmurla, Sini, Surgiguda and Tusra in District Bolangir ; Burdakhol, Chammakhandi, Kukkudkhandi, Pattagadh, Ratnapur and Santumba in District Ganjam ; and Bhavanipatna, Jampada, Rampur and Surgiguda in District Kalahandi. A few rolled and worn-out fragments of a wheel-made red were are recovered from Burdakhol, Golantra and Pattagadh in District Ganjam.

51. EXPLORATION IN DISTRICT PHULBANI.—Shri Rath of the Department of Archaeology and Museums, Government of Orissa, explored the Chakapadu area in Udayagiri Sub-division and located two old Siva temples and a circular mound possibly representing the remains of a *stupa.*

PANJAB

52. EXPLORATION IN DISTRICT AMBALA.—The Department of Ancient History and Culture of the University of Panjab explored about twenty sites in Tahsils Ambala, Jagadhari and Naraingarh and recovered : (i) Harappan pottery from Dukheri in Tahsil Ambala and Sandeh in Tahsil Jagadhari ; (ii) late Harappan pottery from Balana and Dukheri in Tahsil Ambala and Badhauli in Tahsil Naraingarh; (iii) Painted Grey Ware from Balana, Kalon, Kardhan, Lakhnaur Sahib, Mallaur, Mirzapur and Segta in Tahsil Ambala, Basantaur, Damla and Suga (Amadalpur) in Tahsil Jagadhari and Badhauli, Sadhaura and Tandival in Tahsil Naraingarh; (iv) the Northern Black Polished Ware at Kardhan and Mirzapur in Tahsil Ambala, Suga (Amadalpur) in Tahsil Jagadhari and Tandwal in Tahsil Naraingarh ; and (v) medieval glazed ware at Badi-Kohri and Shahpur in Tahsil Naraingarh. Besides, remains of a solid structure, perhaps representing a *stupa,* were found at Chaneti in Tahsil Jagadhari and medieval sculptures at Kazimpur in Tahsil Naraingarh.

Shri H. K. Narain of the North-western Circle of the Survey explored ancient sites at : (i) Kakrauni in Tahsil Jagadhari, yielding the Painted Grey and Northern Black Polished Wares, black-painted red ware and incised ware ; (ii) Chanda-Kheri in Tahsil Jagadhari, yielding grey ware, black-slipped and black-painted red wares ; and (iii) Deel-Chapper and Saundha, yielding remains of early Christian era including the Red Polished Ware.

53. EXCAVATION AT SUGH, DISTRICT AMBALA.—The Department of Ancient Indian History and Culture of the University of Panjab undertook a small-scale excavation at the ancient site of Sugh, about 5 km. cast of Jagadhari. Excavation revealed the use

of the Northern Black Polished Ware along with grey ware. Besides, a single sherd of the Painted Grey Ware was also obtained from the lowest levels. Other finds included : Sunga-Kushan terracotta animal figurines ; bull-headed bottle-stoppers of copper ; beads of semiprecious stones ; bangles of clay ; and a few uninscribed copper cast coins.

About 1.6 km. to the west of the site were noticed remains of a large rectangular burnt-brick structure of early historical period, which seemed to be either a fortress or an enclosure of some monastery. The wall, measuring 1.5 m. thick, was made of bricks of the size of 50 X 26 X 10 cm.

54. EXPLORATION IN DISTRICT AMRITSAR.—In the course of his exploration, Shri H. K. Narain of the North-western Circle of the Survey discovered early historical sites at Makhan-Windi and Mattewal. Ancient sites yielding *inter alia* black-slipped, black-and-red and grey wares were located by him also at Argan-Manga, Chawinda, Ghari, Ghugatwind-Hinduan, Khabba, Kotli-Mallian and Taragarh II.

Remains of the early historical period of *circa* first-second century A.D., including black-painted red ware and the Red Polished Ware, were found by him at Fattehpur, Rajputan and Vadali-Dogran.

55. EXPLORATION IN DISTRICT JULLUNDUR.—Shri K. N. Dikshit and Shri H. K. Narain of the North-western Circle of the Survey explored the right bank of the river Sutlej from Apra to Nurmahal a distance of about 35 km. within the limits of Tahsil Phillaur and brought to light sites of different categories.

Of these, Dhuleta, Katpalon and Saprota yielded the Painted Grey Ware and black-slipped and black-and-red wares. Katpalon in addition yielded the Harappan pottery. Painted Grey Ware and black-and-red wares were also reported from Apra and Ash-aur and the Harappan pottery, Painted Grey Ware and black-slipped ware from Nagar. Besides these, Sunga-Kushan and medieval glazed wares were recovered from Haripur, Nir and Rajpura. Laliana, Mullanwalan and Tehang yielded only medieval glazed ware.

RAJASTHAN

56. EXPLORATION IN DISTRICTS BHARATPUR, BUNDI, JAIPUR, JHALAWAR AND KOTAH.—The Department of Archaeology and Museums, Government of Rajasthan, during the course of exploration found : (i) the Painted Grey Ware at Aghapur, Au and Kama in District Bharatpur ; (ii) late Gupta sculptures at Nithar and Pangore (near Dig) in District Bharatpur ; (iii) a medieval temple at Mandawari in District Jaipur ; and (iv) medieval sculptures at Bhandadevara, Keshavarai-Patan, Mangrol-Sarthal and Ramgarh in Bundi and Kotah regions and Chandravati in District Jhalawar.

57. EXCAVATION AT NOH, DISTRICT BHARATPUR.—The Department of Archaeology and Museums, Government of Rajasthan, under Shri R. C. Agrawala, in collaboration with the Art Department, University of California, under Professor J. LeRoy Davidson, undertook excavation at Noh, situated about 6.43 km. west of Bharatpur on Agra road.

Two cuttings, labelled A and B and measuring respectively 30 X 4 and 20 X 4 m., were laid out. Cutting A, on the western slope of the mound, presented a complete section with a 13'50-m. thick deposit belonging to five cultural Periods.

Period I yielded sherds of plain black-and-red and grey wares along with those of worn-out Ochre-coloured Ware. The black-and-red ware is quite different from that obtained from Ahar. The strata of the Ochre-coloured Ware could not be isolated. No other find was obtained from these levels.

Period II was marked by the presence of the Painted Grey Ware and black polished ware comparable with that found at Hastinapura in Period II. Besides, the black-and-red ware of the preceding Period also continued.

Among the noteworthy finds, mention may be made of beads variously of terracotta and semiprecious stones including etched and terracotta discs bearing incised scalloped designs, similar to those obtained from Hastinapura and Vaisali. The latter probably served some votive purpose. Of special interest were conical terracotta discs in the Painted Grey Ware fabric and a lid of the Painted Grey Ware with a painted bird atop. Human terracotta figurines were absent. No structures pertaining to this Period could be exposed, due perhaps to the restricted area of the dig.

Period III witnessed the disappearance of the black-and-red ware. The Painted Grey Ware, in a baser fabric, however, continued, the forms remaining the same as of the mature fabric. Sherds of the Northern Black Polished Ware were also found in this Period. The use of iron was attested by an arrow-head. No punch-marked coins, usually associated with such an assemblage, were obtained from the deposits of this Period. A mud-brick structure belonging to the late levels of this Period was also exposed.

Period IV was marked by a mud-brick structure, perhaps representing a rampart-wall, ascribable to the beginning of the first century B.C. or so.

In Trench B, six structural phases were recognized in a large-sized baked-brick wall belonging to this Period. The departure from the previous ceramic tradition was clearly evident. The Painted Grey Ware and other associated wares of the previous Periods were absent and gave way to common red-ware ceramics. Cast copper coins of the Mitra rulers of Mathura, four-legged saddle-querns, and terracotta figurines, both human and animal, constituted the noteworthy finds from this Period. Amongst terracotta figurines, the depiction of a couple in an amorous pose and goddess Vasudhara were of singular interest. Besides, a fragmentry stone piece of Chunar sandstone bearing the typical Mauryan polish was also obtained from these deposits.

Period V represented the age of poverty and decadance and is assignable to the seventh-eighth century A.D. Numerous pits were found all over the occupation. These yielded a number of stone plaques and a beautiful palm of a life-size Buddha or *yaksha* figure in white-spotted red sandstone.

58. EXPLORATION IN DISTRICT CHITORGARH.—During the investigation of local reports on some buried remains in the field near the village of Jaloda on the road connecting Chhoti-Sadri with Badi-Sadri, Shri K. V. Soundara Rajan of the Survey found a rich Middle and Late Stone Age site, yielding a range of tools made mostly on red jasper of laminated variety in the case of the Middle Stone Age tools, and on chert and agate in the case of microliths. In view of the added occurrence of good quartzite in the locality, it would not be surprising if the tract also yielded Early Stone Age tools.

On the Kotah-Chitorgarh road, near Bichore village, an Early Stone Age site was located. The river-section showed an implementiferous lower gravel congolmerate overlain successively by a silt, a second gravel and the top loamy silt. From the bed of the river itself were collected many tools including handaxes, cleavers, flakes, scrapers, etc., mostly of the advanced Acheulian type. The tools and the site form an integral part of the Early Stone Age complex of the valleys of the Gambhiri and Berach on the one hand and the Banas on the other.

Dr. V.N. Misra of the Deccan College Post-graduate and Research Institute, Poona, continued (1962-63, p. 18) his investigations in the Berach basin. The river Kadamali,

a tributary of the Gambhiri, was explored for a total distance of 6 km., 3 km. on either side of the road-bridge near Nimbahera. The sequence of deposits on the river, from bottom upwards, was as follows : (i) pebbly gravel ; (ii) concretionary clay ; (iii) sandy gravel ; and (iv) silt. Early Stone Age and Middle Stone Age tools were collected *in situ* respectively from the pebbly and sandy gravels. Microliths were found at a number of places along the river bank on the surface of the silt.

The river Wagan, a tributary of the Berach in the same District, was explored from its confluence upstream for a stretch of 8 km. A cliff-section on the river along the left bank, close to the road-bridge at Hijiakheri, showed the following sequence, from bottom upwards : (i) concretionary clay ; (ii) fine sandy gravel ; and (iii) silt. No tools were found in any of these deposits. In front of the above section, however, and directly overlying the rock was a highly-cemented 2.43-m. thick deposit of fine gravel with occasional pebbles yielding Middle Stone Age tools. Though Early Stone Age tools were available in the river-bed, their stratigraphical context remained unknown. Microliths were found on the rocky surface at a number of places and sometimes also in the riverbed, where they had apparently been washed down from the surface above.

A study of the available lithic material from this region shows that typologically there was no break between the Early and the Middle Stone Ages. Handaxes and cleavers which were made of quartzite in Early Stone Age continued to be made in chert in the Middle Stone Age, though their size and number were reduced. The evidence from the Luni and Betwa basins of western Rajasthan and north-east Madhya Pradesh also points to a similar inference. It would appear, therefore, that unlike the northern Deccan, the change from the Early to the Middle Stone Age in the Rajasthan area was through a smooth transition. This typological inference needs to be established by stratigraphic evidence.

59. EXCAVATION AT KALIBANGAN, DISTRICT GANGANAGAR.—The School of Archaeology, in collaboration with the Excavations Branch of the Survey, resumed (1962-63, p. 20) excavation at Kalibangan under the joint direction of Shri B. B. Lal and Shri B 'K Thapar. Besides imparting field-training to the students, this season's work had four objectives to realize : first, to complete the house-plans of the pre-Harappan structures exposed last year ; secondly, to continue investigation of the fortification-wall round the smaller of the two mounds (KLB-1) ; thirdly to lay bare more area of the Harappan township at the larger mound (KLB-2) ; and lastly, to locate the corresponding cemetery and to expose a few burials. For the first two objectives, fresh trenches were laid along the southern, eastern and western margins of the mound KLB-1, for the third, the already-excavated area at KLB-2 was extended on either side, and for the fourth, a few exploratory trenches were sunk in the flood-plain to the south of KLB-1 and continued westwards until the cemetery was located.

The excavation of the pre-Harappan deposits at KLB-1 confirmed the findings of the last year both in respect of structures and pottery and other antiquities. The existence of pits, displaced strata and subsided walls (pl. XVIII A) was also attested this year. Among the noteworthy finds, mention may be made of an almost complete copper or bronze celt obtained from the mid-levels of this period.

At KLB-1, the excavation had in the previous year indicated the existence of a fortification-wall during the Harappan occupation, thus suggesting its function as a citadel. On the southern side, where its vestiges were easily identified, the fortification-wall was this season excavated to a continuous length of over 100 m. exposing rectangular salients

and a south-eastern corner-tower. Two sets of brick-sizes (40 X 20 X 10 and 30 X 15 X 7.5 cm. with a margin of a couple of cm.), representing two principal structural phases, were observed in the masonry of this wall. In the earlier phase, showing the use of the larger-sized bricks, the width of the wall varied from 6.50 to 7 m., while in the latter, employing the smaller-sized bricks, the width was extended, at places on either side, to measure between 9 and 11m. At some places, a further structural sub-division could also be differentiated in the latter phase. The salient (pl. XVII), projecting 9.35 m. from the main face, was 17 m. broad and rose imposingly with a battered exterior. Of the south-eastern corner-tower only the projection-side was available, the remaining angles, being insufficiently preserved to indicate dimentions, could hardly be reached. No remnants of the south-western corner was traced. It was found that a large part of the structure had been completely eroded away. Between the latter and the central salient was exposed another projecting structure retaining four post-holes on the outer edge of the masonry (pl. XVIII B). Its relationship with the fortification near by and the precise function of the post-holes have not yet been elucidated. Excavation also revealed that the foundations of both the main fortification-wall and the salients cut through the strata or the structures of the preceding occupation. It is significant that unlike Harappa, at no place was the fortification-wall integral with any of the platforms within the citadel, against the back of the fortification-wall there being normal occupation-strata. That the fortification had become ineffective during the late phase of the citadel is amply demonstrated by the structures built against the eroded top of the central salient. A few cuttings across the presumed alignment on the eastern and western sides of the mound also proved the existence of the wall on these sides. In the absence of any clear vestiges on the northern side and in anticipation of the further search for a complete outline, it may be inferred that the fortification did not enclose the northern part of the mound.

At KLB-2, the excavation uncovered a further area of the township with its characteristic chess-board plan. Four arterial thoroughfares (pl. XIX) running north-south have so far been excavated, and it is surmised that within the unexcavated width of the mound two, if not three, more may be found. The width of the streets and thoroughfares ranged between 1.80 and 7.20 m. and significantly enough approximated to the unit of about 1.80 m. While the north-south thoroughfares were found to run unimpeded, the east-west running lanes or streets did not cut across the former and were staggered in plan. Apart from the rectangular troughs or bazar-platforms, no other encroachment was noticed in the thoroughfares and streets. In this typical grid layout of the township, each house faced at least two, if not three, streets, and, with a rectangular plan/consisted of a courtyard often with a well and six or seven rooms aligned on the three sides. Within one of the rooms of almost each house was found the curious 'fire-altar' (pl. XX A), sometimes also in suces-sive levels, indicating their recurrent function. The houses were made of mud-bricks of the size of 30 X 15 X 7.55 cm., laid in regular courses of headers and stretchers simulating the characteristic English bond.

Among the finds recovered from the Harappan levels were: the attractively-painted and gracefully-shaped pottery; long chert blades and cores; personal ornaments like beads, variously of semiprecious stones, faience, steatite and terracotta; bangles; household tools and objects of copper and bronze (pl. XXI A); miscellaneous terracotta objects including a feeding-bowl; terracotta figurines of animals (pl. XXII A) and birds; human figurines; gamesmen;cubical weights; and the seals (pl. XXIII A) and sealings including an outstanding find of a cylinder-seal (pl. XXIIIB). Equally noteworthy was a terracotta cake, incised

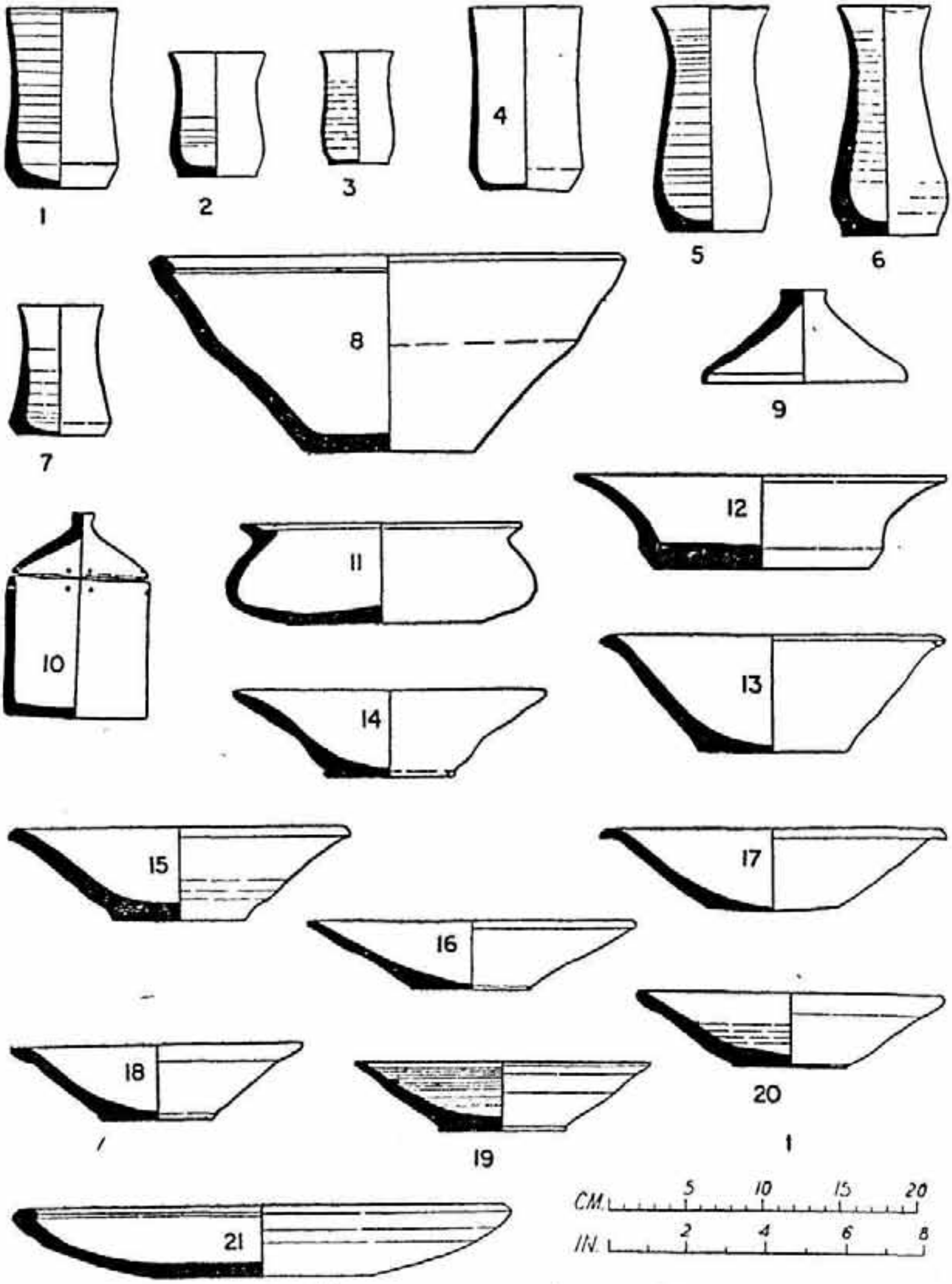


FIG. 4. *Kalibangan : pottery-types from extended*

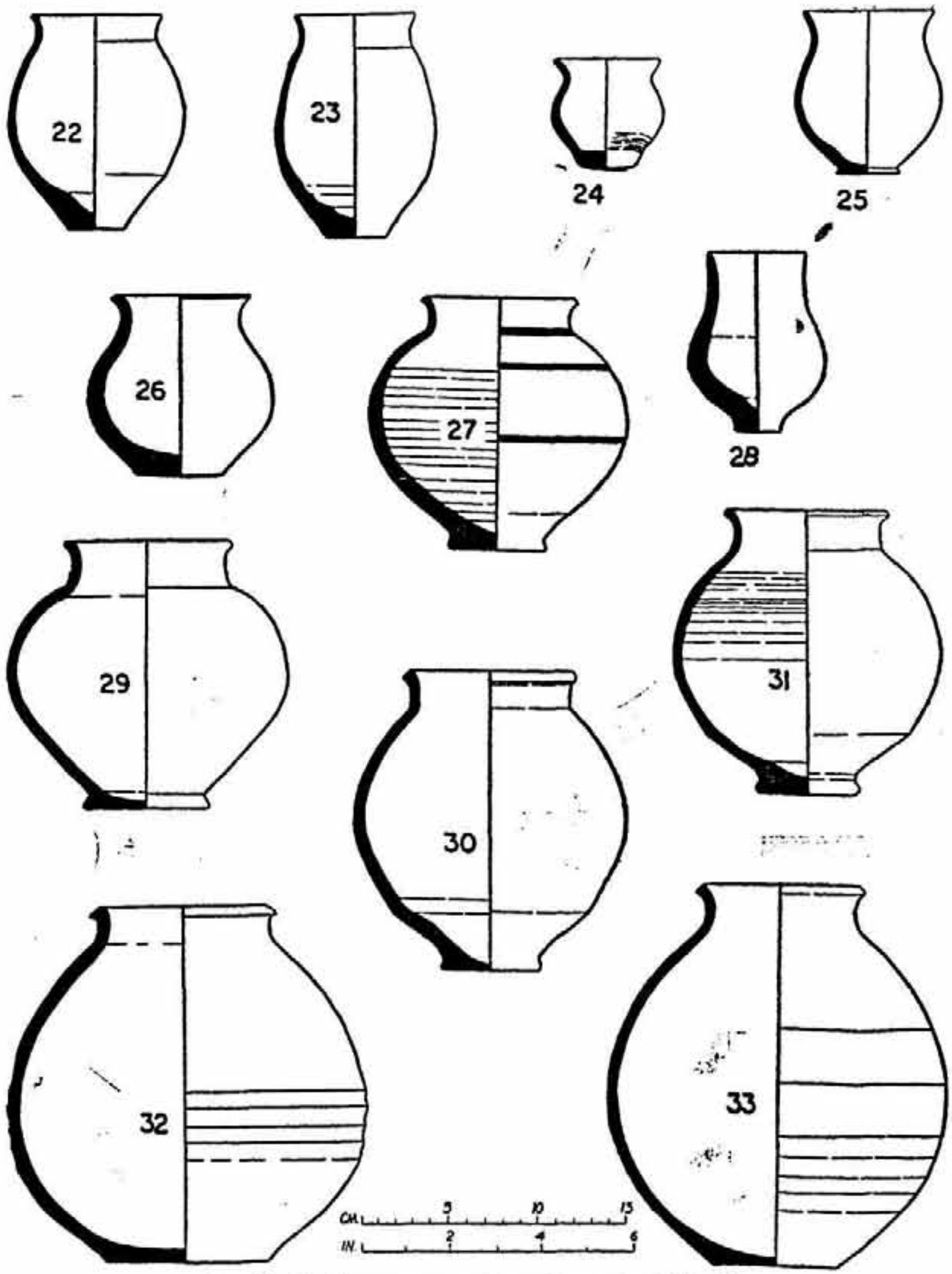


FIG. 5. *Kalibangan : pottery-types from extended burials*

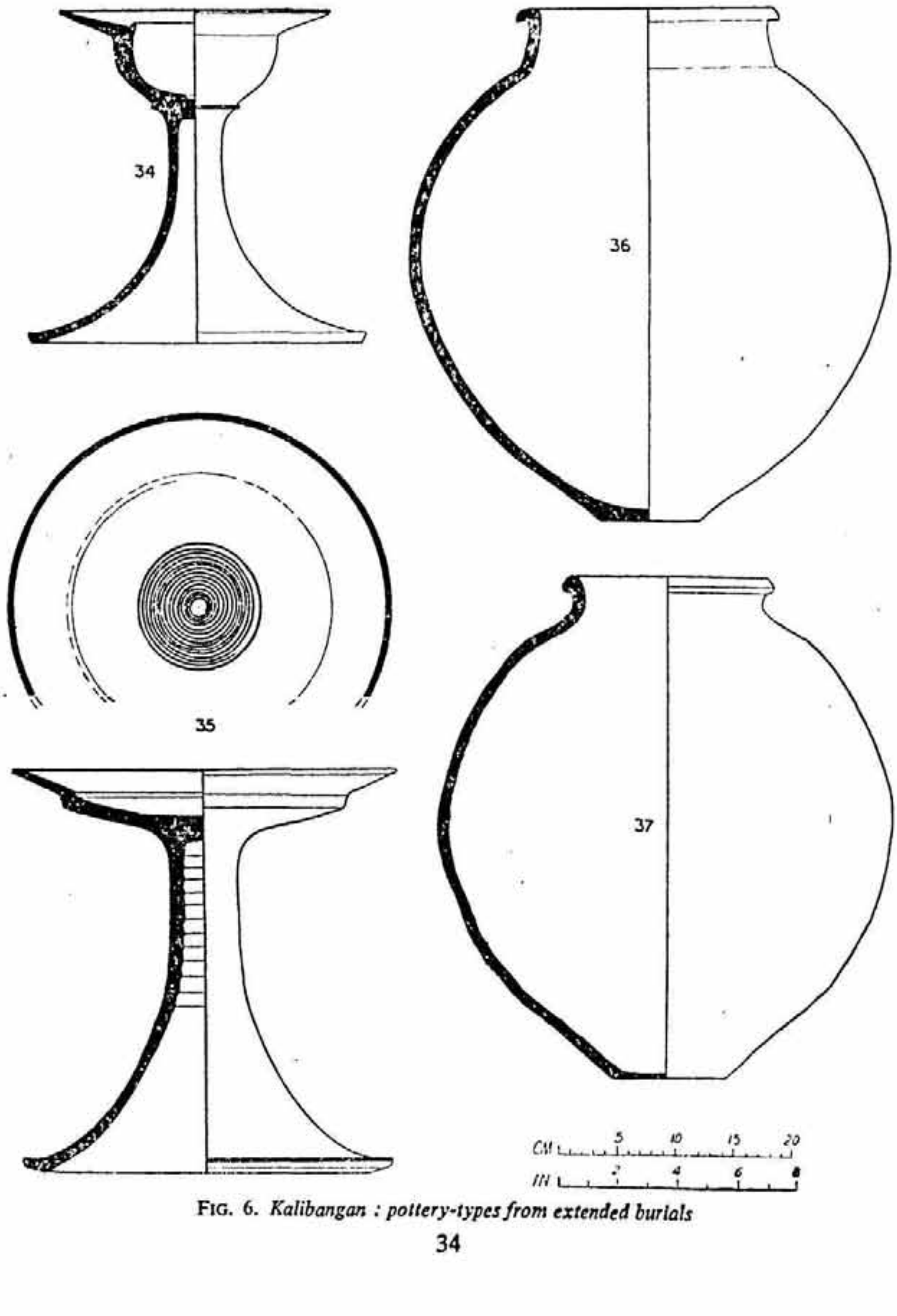


FIG. 6. *Kalibangan : pottery-types from extended burials*

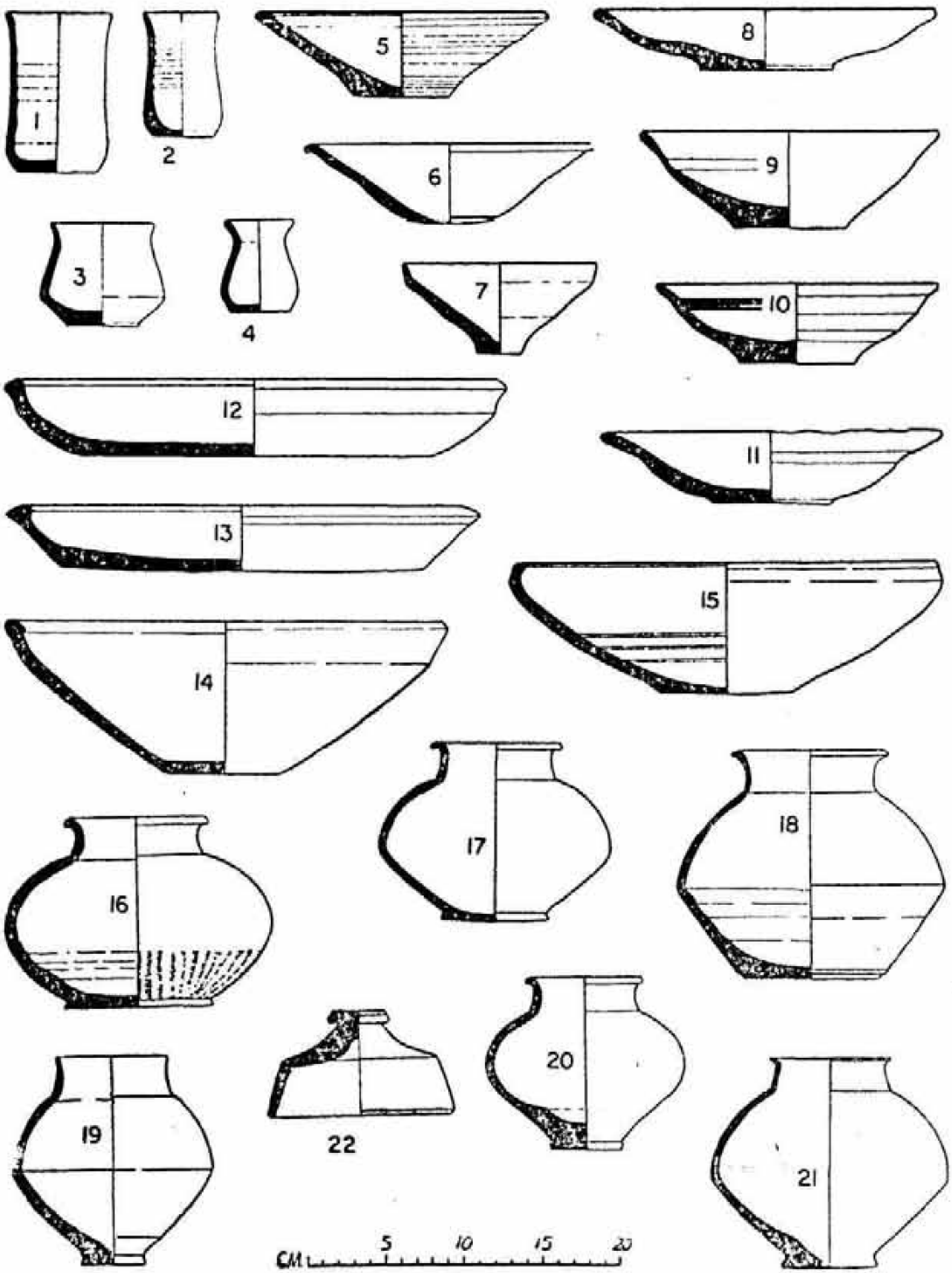


FIG. 7. *Kalibangan : pottery-types from pot-burials*

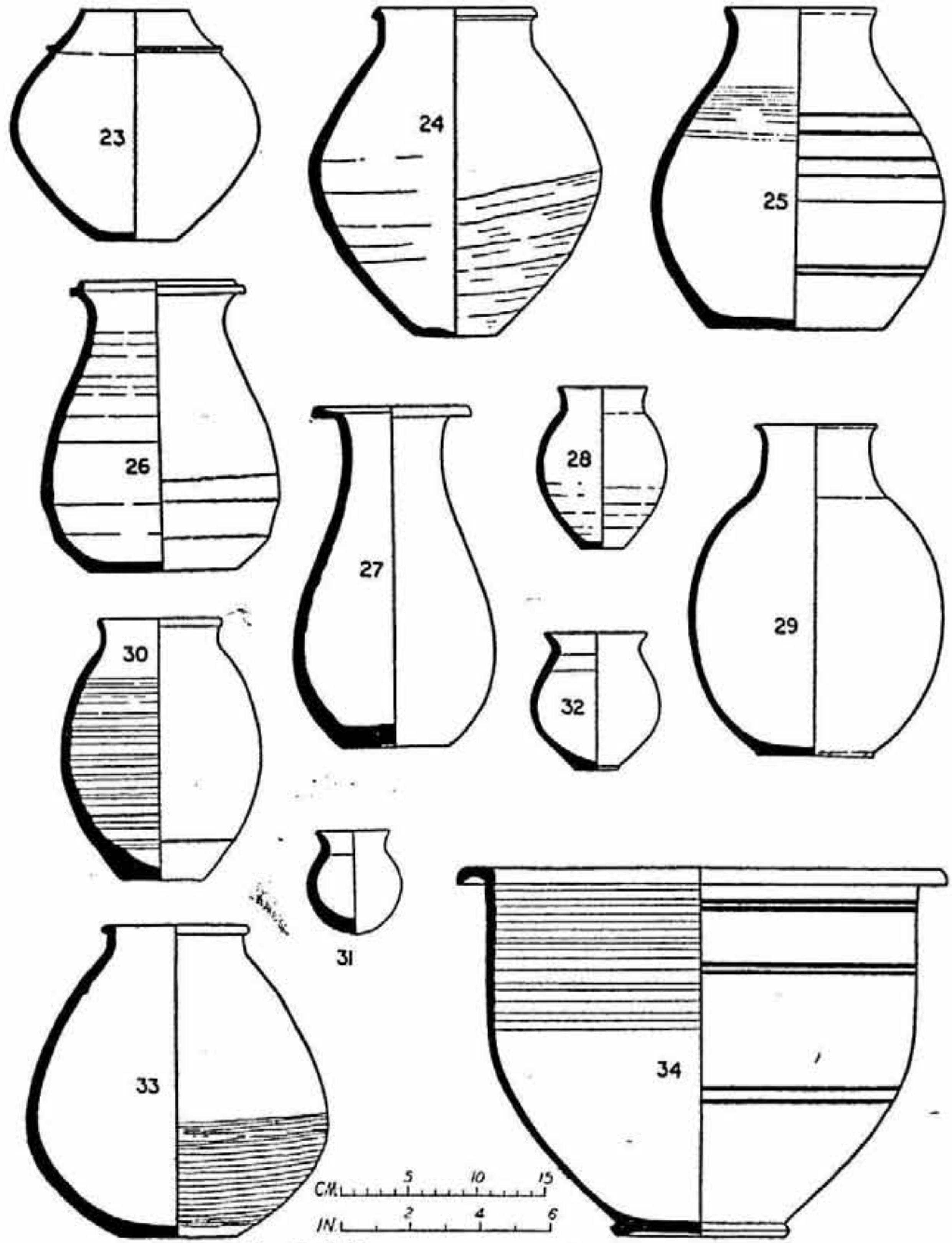


FIG. 8. *Kalibangan : pottery-types from pot-burials*

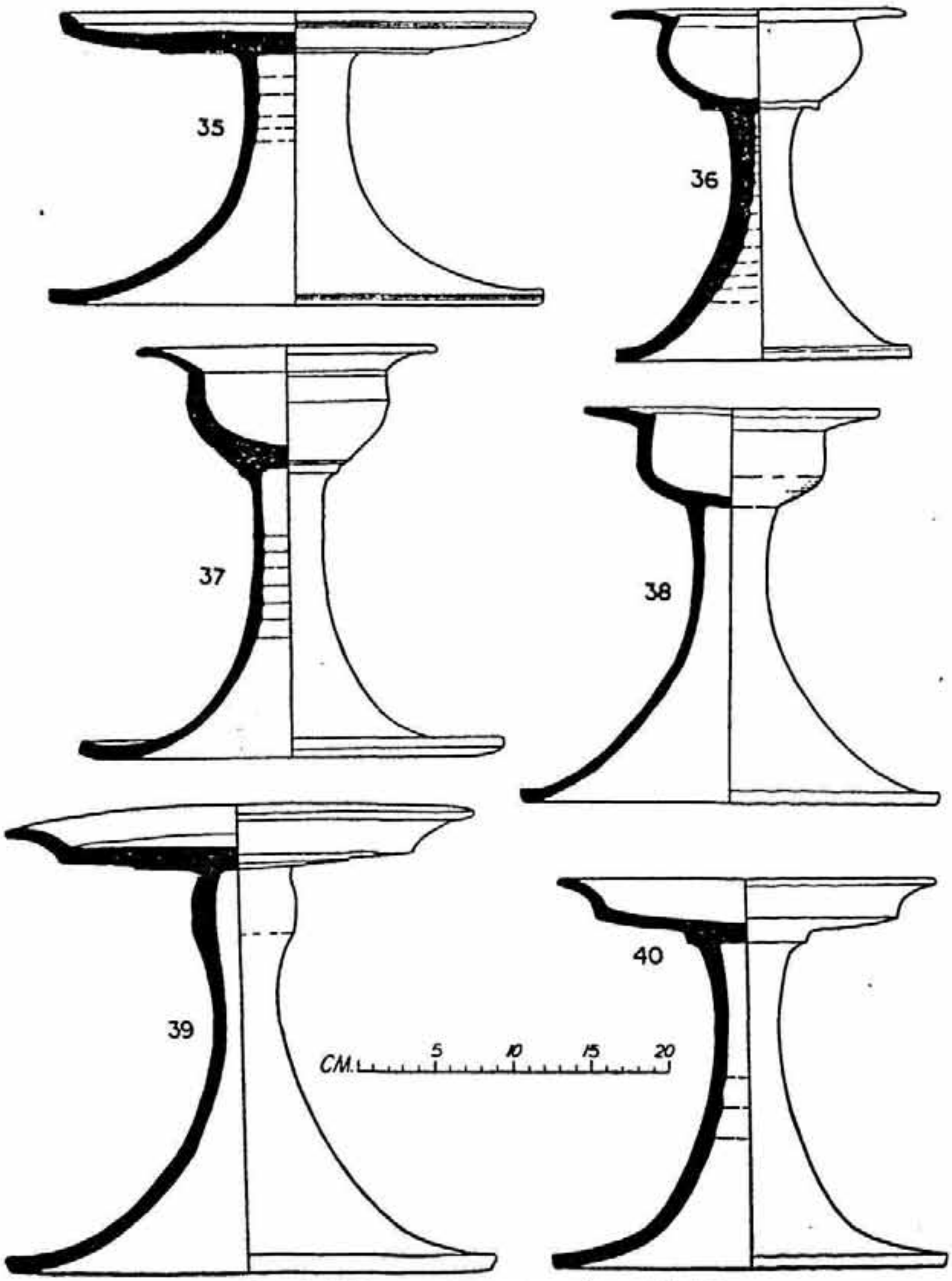


FIG. 9. *Kalibangan : pottery-types from pot-burials*

both on the obverse and the reverse with some elusive figures, one of them horned (pl. XXII B). Its ritualistic bias could, therefore, be reasonably inferred.

As already indicated above (p. 30), a Harappan cemetery was located about 300 m. west-south-west of the citadel mound on the present flood-plain of the river. Due to the efflorescence of the salts (pl. XX B), the location of the graves could easily be determined on the present surface. Two types of burials were attested: (i) extended inhumation (pl. XXIV A) and (ii) pot-burial (pl. XXIV B), the latter method being recorded for the first item in a true Harappan cemetery.

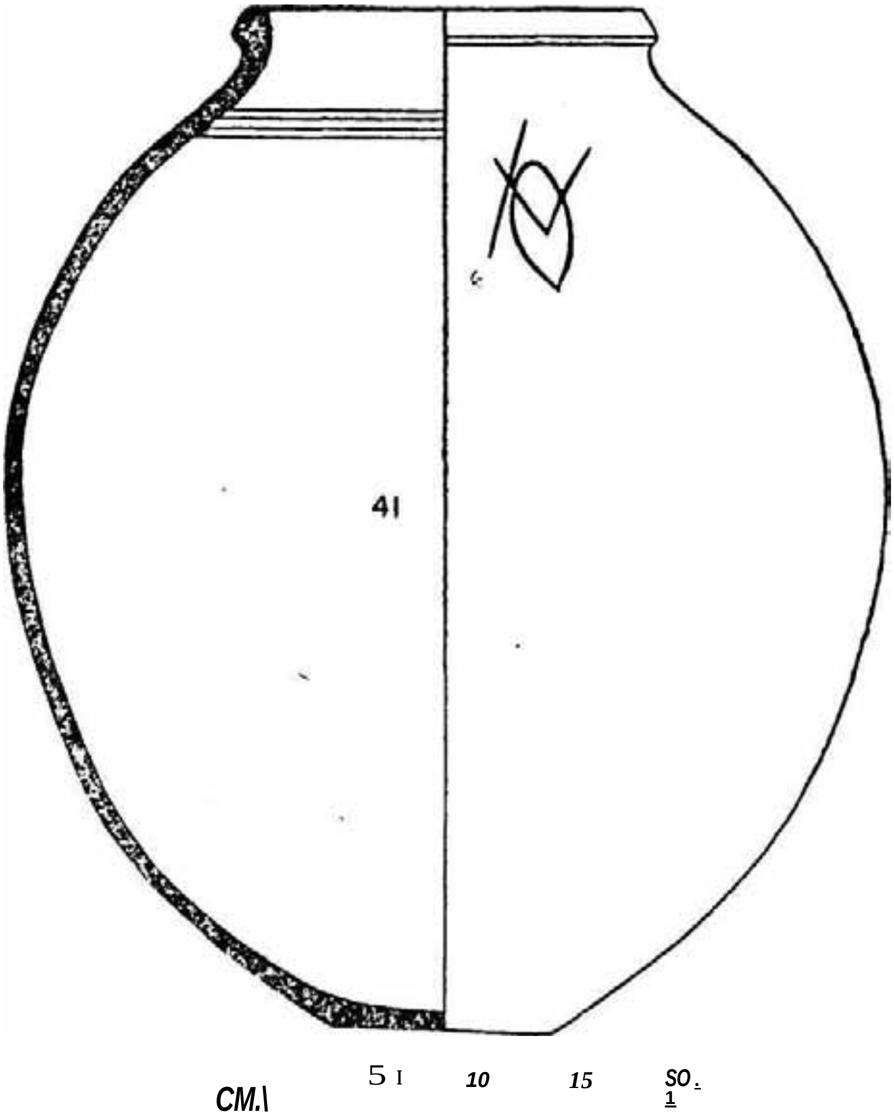


FIG. 10. *Kalibangan : pottery-type from pot-burials*

Of the first variety, as many as seven graves were excavated, with the following recurrent features. On the floor of an oblong pit, the skeleton was laid in an extended position with the head towards the north. Around the head-region, the funerary furnishings in the shape of pots and, in one case, a copper or bronze mirror (pl. XXI B) were,

arranged. The pit thereafter was filled with the self-same earth. Evidence of trepanning showing six circular holes was noticed on a child's skull.

Of the second variety, ten pits were exposed. Here, the pit was oval or circular on plan and contained, besides an urn, other pots which were often found clustered round the former and varied from four to twenty-nine in number. Besides pottery, some of the pits also contained beads, shell bangles and steatite objects. No skeletal material was recovered from any of the urns or the pits as a whole, nor were any other objects including pots found within the urns. The precise nature and significance of these pits require to be further investigated.

The pottery recovered from the burials of the two varieties (figs. 4-10) was typically Harappan Whereas some of the diagnostic types like the beaker, dish-on-stand, bowl and round-bellied vessel are common to both the varieties, a few shapes were peculiar to each; but in view of the limited evidence this difference can hardly be overstressed. The entire assemblage was essentially plain, painted decoration, restricted to horizontal bands, being present only on a couple of examples.

Carbon-14 determinations of the samples from the various levels of the site indicate that the Harappan settlement at Kalibangan endured only for about three hundred years or so and came to an end in the beginning of the second millennium B.C. How far earlier the first settlement of the pre-Harappans started cannot be said with certainty, but a period of a century or so would appear to be consistent with the available evidence.

UTTAR PRADESH

60. EXPLORATION IN DISTRICTS ALLAHABAD, MIRZAPUR AND REWA (MADHYA PRADESH).—The University of Allahabad, under the general direction of Professor G. R. Sharma, explored the valleys of the Belan, Gorama, Seoti, Tons and Tundiari in District Allahabad and Amavani and Patawan-Jor-ka-Nala in Districts Mirzapur and Rewa. The exploration, conducted in Allahabad District by Shri B. B. Misra, and in Mirzapur by Shri V. D. Misra, brought to light: (i) sites of the Early Stone Age at Bataubir near the Kanhaiya hillock in District Allahabad and the Lekhahiya hillock in District Rewa; (ii) Middle Stone Age sites at Patawan-Jor in District Rewa; (iii) Late Stone Age (perhaps intermediary) sites at Bhagesar, Chopani, Kapasi and Sepauwa, yielding chert cores of large size ;(iv) Late Stone Age (pre-pottery microlithic) sites at Bans, Bhagesar on either banks of the Belan, Bataubir, Chopani and Deharani on the Seoti, Gadha, Hanuman-ganj, Hardaun on the Gorma, Jadipur, Jharna-ki-Pahari, Kapasi-Kalan and Kondi on the Tons, Koskan-Gadha on the Tundiari, Kundidih, Lonamati and Majhigawan near Dhobi-ghat hillock in District Allahabad and Koria on the Gonna in District Rewa ; (v) painted rock-shelters at Koskan-Gadha in Chandwa-ki-Pahari and Vasaha in Jharna-ki-Pahari in District Allahabad, the Lekhahia group in District Mirzapur and Khusiar-Ghat-ki-Pahari in District Rewa (four stages of evolution of the paintings being determined-outline, filling with oblique lines, solid filling and the use of white colour); (vi) megaliths at Bataubir, Hardaun on the Gonna, Jadipur, Kapasi, Kondi, Koskan-Gadha, Kundari, Lonamati, Mando and Majhigawan in District Allahabad and near Chachai falls on Rewa-Chachai road; and (vii) an early historical site at Phaphamau. in District Allahabad, yielding the Northern Black Polished Ware.

To the south-west of the megalithic site at Hardaun was also located the corresponding habitation-site which yielded the typical black-and-red ware and a coarse dull-red ware, similar in fabric, texture and typology to the wares obtained from the excavated megalith at Kotia.

61. EXCAVATION AT KAUSAMBI, DISTRICT ALLAHABAD.—Shri D. Mandal of the University of Allahabad, working under the direction of Professor G. R. Sharma, resumed excavation in the palace-area at Kausambi.

Excavation revealed that the palace was defended by a massive wall on the Yamuna side also. A 6-m.wide stone wall, standing to an extant height of 2 m. at places, was traced to a length of about 52 m. on the southern side on the palace. Two structural phases, showing a construction of rubble in the earlier and ashlar-masonry in the latter, were recognized. The ceramics recovered from the associated strata fully confirmed the classification determined earlier (1961-62, p. 50). Among the noteworthy structures exposed, mention may be made of a stairway, 2.38 m. in width and with three extant risers. Built of stone blocks, set in lime-mortar, it furnishes a definite evidence for the existence of some kind of landing on the Yamuna side. On the basis of the recovered pottery and its stratigraphical position in relation to other structures, the stairway could be assigned to the structural Sub-period VI of the palace.

After closer study of the blocks of arched roof exposed earlier, it was observed that the eastern gallery of the palace was covered by a 7.62-m. wide vault-like roof, resting on the two flank-walls running north-south. At a place in the gallery, the blocks of the fallen vault were found almost connected with the supporting walls. This belonged to the structural Sub-period X of the palace and is datable to the first-second century A.D.

In addition to the above, a long narrow trench, measuring 41.14 X 2m., was taken across the eastern sector of the northern boundary-wall of the palace. As a result of the excavation, it was found that the palace was defended by a dry ditch only at the outer side of the northern boundary-wall, no evidence of any such ditch being traceable at its inner side. It was also confirmed that the structural Sub-period I (coarse rubble-masonry) of the stone wall was not associated with the dry ditch, which seems to have been introduced in the subsequent period when the Northern Black Polished Ware made its appearance. The ditch showed three structural phases with the width measuring 6.55, 9.29 and 5.13 m. in the respective phases. The pottery recovered from the lowest levels (Phase I) of the ditch included the N.B.P. Ware and black-slipped, red and grey wares, characteristic of the early N. B. P. Ware phase.

In the same cutting, an east-west mud-brick wall, 3 .73 m. in length, was also discovered about 13.71 m. north of the northern boundary-wall of the palace. While the exact stratigraphical position of this wall still remains to be established, from the available evidence it seems to have belonged to the pre-stone wall phase of the palace.

62. EXCAVATION AT KOTIA, DISTRICT ALLAHABAD.—With a view to ascertaining the nature and content of the megaliths of the Allahabad region and to studying their relation ship with those of the Varanasi and Mirzapur regions on the one hand and the peninsula on the other, five megalithic monuments were opened at Kotia, situated on the right bank of the Belan, 74 km. from Allahabad on the Deoghat highway. The excavation was conducted by the University of Allahabad under Professor G. R. Sharma, assisted by Shri B.B. Misra and Shri V. S. Dubey.

Out of five monuments opened, Megs. I (pl. XXV A), II and III are cists, Meg. IV (pl. XXV B) a cist within a cairn and Meg. V a cairn-circle. The cists invariably comprised an east-west oriented rectangular chamber dug to an average depth of 60 cm. Unlike the cist-chambers of the peninsula, the side-walls of these chambers were prepared not of monolithic slabs, but of multiple small stone pieces placed together directly against

the four walls of the pit in vertical rows of two-to-three courses in height. As the sides of the pit were slanting, very often an offset was provided between two successive courses of the cist-walls to cope with the requirements of the pit. No flooring of stone was provided for the cists, nor any capstone placed to seal it finally.

After the end of the ritualistic procedure, the entire area inside the chamber was covered with small stone pieces. Whether the monument was always enclosed by a low-rising cairn bound within a stone circle still remains to be determined.

Within this general practice of erecting a cist-chamber, certain variations were observed. For example, in Meg. I the cist was divided into three compartments like the transepted cists of south India. The whole chamber (5·86 X 4.26 m. in area), in this case, was first divided into two compartments, one of which was further subdivided by a stone lining, into two compartments, no provision being made to interconnect the three chambers with each other. The remaining two cists (Megs. II and III) were unicameral.

Meg. IV consisted of a cist enclosed within a heap of stone rubble. At the top of the cairn, however, stones were erected exactly in the shape of the rectangular chamber within.

Meg. V consisted of a stone circle enclosing a rectangular pit, oriented east-west and dug to a depth of 60 cm. The grave-goods, which included pottery, an iron spearhead and skeletal remains, were placed immediately on the floor to which a 15-cm. thick covering of ash was provided. The pit was filled with the selfsame earth which rose above the then surface in the shape of an earthen tumulus. To complete the monument a cairn of stone rubble, bounded at the periphery by a stone circle, was thereafter made.

Meg. I proved to be the richest in its yield. From it were recovered five iron implements, comprising a spearhead, two sickles, an arrow-head and an adze, pottery and skeletal remains. Iron was also found in Megs. III, IV and V but was absent in Meg. II.

Osteoscopic field-study of the skeletal remains from these graves revealed that most of the bones belonged to domestic animals including the *Bos indicus,* sheep, pig and cattle. A few pieces of tortoise and rodent were also identified in Meg. V. Excepting the two or three pieces of ribs from Meg. V, human bones were almost absent in these monuments.

A few bone pieces from Meg. I were found to contain cut-marks on them, indicating deliberate slaughter of the respective animals at the time of the ritual. Besides, some of the bones from Megs. I and V showed charred state.

The pottery associated with these burials consisted of black-and-red ware, red ware and a dull-black or grey ware of thick fabric. The characteristic types in all the three wares included the bowl or dish with out-turned rim and flattened base, bowl with hollow and solid pedestal, sharply-carinated cooking-vessel, knobbed lid, medium-sized vessel with everted rim, large elliptical storage-jar, bowl with ledged shoulder, etc.

In the absence of a stratified sequence obtained at a corresponding habitation-site, it is not possible to place the megalithic culture of this region in a chronological scale. From the association of iron objects it appears, however, that these megaliths belong to a period later than those in the Varanasi region. Apart from the respective occurrence and absence of iron, there appears to be no correspondence between the pottery-form of the two regions. These megaliths may tentatively be placed between the time-bracket of eighth-fourth centuries B.C.

63. EXCAVATION AT MAINAHAI, DISTRICT ALLAHABAD.—A small-scale salvage-operation was conducted at Mainahai by the University of Allahabad, under Professor G. R. Sharma, assisted by Shri D. Mandal.

The site, situated at the south-eastern fringe of the village Mainahai, 2.40 km. cast of the eastern gateway of Kausambi, is roughly rectangular on plan measuring 12.76 m. from north to south and 68.27 m. from east to west and rises to a height of about 3 m. Recent brick-robbings had brought, to light some interesting and rare pieces of sculpture. Their stratigraphic position, therefore, remained to be established by a systematic dig.

The operation covered an area of 150.50 sq. m. and brought to light sixteen walls of baked bricks and two of stone. The latter formed part of a huge building, possibly of a religious character. The walls were built of huge blocks of stone, the first two courses being set in iron spigots in square sockets. Of the brick constructions, the most important was a basement measuring 2.135 m. by 2.39 m. provided with a rectangular platform. The brick walls showed six structural phases.

Of special interest were the sculptures and sculptural fragments numbering over three hundred. These included: human figures; animals, including bulls, elephants and lions; fragments of pillars and capitals; and pieces of door-jambs with floral representation. These were made of either red or buff sandstone.

The entire collection may be broadly divided in two groups. The sculptures of the first group consisted mostly of capitals and fragments of tapering pillars. The capitals (pl. XXVI A) appear very close to those of the Mauryan pillars in polish and composition. The new features, not known to the Asokan capitals, were: (i) an additional circular spigot on the abacus to be fitted in the socket of the surmounting figure; (ii) the introduction of the technique of making the entire capital into two separate parts against the monolithic technique of the Mauryan tradition; and (iii) the depiction of certain animals on the abacus such as camel, rhinoceros, etc. Besides, a minor deviation is also reflected in the proportion between the height and the diameter of the capital. Against the Asokan proportion of two-thirds to one, of height to diameter, the proportion of these capitals was one to one. The figures depicted on the abacus were in very low relief and do not depict the typical Mauryan form or delineation. The honeysuckle motif was also present. Besides the bell-shaped capitals, a very interesting square pinnacle, in the shape of a fan-shap3d palm, was discovered. It bears much resemblance with the pinnacle from Besnagar with the difference that the latter does not bear the bunches of palm-fruits. A massive standing bull (pl. XXVIB) in the round, measuring 86.36 cm. in length from tail to neck, was also found. Unfortunately, however, its head and portions of all the four legs below the ankle are broken. Round the neck was a richly-decorated necklace of three threads. This statue, too, would have served the purpose of crowning figure of some capital and is more or less identical in form, technique and finish with That of the bull on the Rampurwa pillar with the difference that the latter does not have a necklace round its neck.

The sculptures belonging to the second group comprised mostly door-jambs, door-sills and fragments of panels decorated with floral patterns. A few human and animal figures executed invariably on buff sandstone and completely devoid of any polish were also included in this assemblage.

Nearly ten fragmentary inscriptions were also recovered from the debris of the last period. The entire collection may broadly be divided palaeographically into two groups. The letters of the inscription belonging to the first group showed mostly post-Mauryan forms, and those of the second Gupta forms.

On the basis of the combined evidence of the structures, sculptures and palaeography of the fragmentary inscriptions a date around the first to the fourth century A.D. may tentatively be assigned for this occupation.

64. EXPLORATION IN DISTRICTS BALLIA, GHAZIPUR, HAMIRPUR, JAUNPUR AND VARANASI.—The Banaras Hindu University, under Professor A. K. Narain, explored sites of various categories as follows : (i) black-and-red ware at Bhimapurdih, Bijalipur, Gadabirghar, Lovika-ka-Tapa, Mairadih, Pukka-Kot and Vainagadha in District Ballia, and Bahotra-ka-Kot, Bhauri-ka-Kot, Bhaghaul-ka-Kot, Bhikampur-ka-Kot, Bhojapur-ka-Kot, Chawar-ka-Kot, Hamirpur-ka-Kot, Kalani-ka-Kot, Kaustuwa-ka-Kot, Khajurgaon-ka-Kot, Kori-ka-Kot, Matehu-ka-Kot, Parita-ka-Kot, Singera-ka-Kot and Tejpur-ka-Kot in District Ghazipur, ; (ii) the Northern Black Polished Ware at Ajaneraghar, Bhimapur-Dih, Bijalipur, Gadabirghar and Masumpur in District Ballia, Chauthi-ka-Kot, Orarheen-ka-Kot, Sidut-ka-Kot and Wazidpur-ka-Kot in District Ghazipur, Dih, Dih-Darari, Kota, Kota-ki-Mari, Kotabarahi, Mahada-ka-Kot and Rohniya-ka-Kot in District Jaunpur, and Benh-ki-Kot, Dhuri-Kusi-Dih, Mia, and Latifshah Dam in District Varanasi; (iii) microliths and fluted cores at Arjuna Dam, Bijarari, Imiliya and Salata-Malata; (iv) Early Stone Age tools like choppers, handaxes, pebble cores at Lahachura in District Hamirpur; and (v) neolithic celt at Nakara, also in District Hamirpur.

65. EXCAVATION AT AHICHCHHATRA, DISTRICT BAREILLY.—The excavation at Ahichchhatra was resumed by the Survey through its Northern Circle, under Dr. N. R. Banerjee, after a lapse of nearly twenty years. The purpose of the work was mainly (i) to re-examine the lower levels with a view to tracing the relationship, if any, between the Painted Grey Ware, which was first discovered on this site, and the Northern Black Polished Ware; (ii) to obtain carbon remains from the respective level for dating by Carbon-14 method; (iii) to trace the position of iron, in view of recent evidence of its association with the Painted Grey Ware at other sites; (iv) to ascertain the stratigraphical position of the fort-wall enclosing the mound; and (v) to obtain a fresh index of the site.

The limited excavation, carried out in the north-east corner of the triangular mound near the earlier excavated site named AC V, revealed three successive Periods of occupation, called respectively Periods I, II and III, each with an overlap with its successor implying continuous habitation in the area from the earliest period to the early Gupta period.

Period I, represented by a 1.22-m. thick deposit, was characterized mainly by the Painted Grey Ware in its usual shapes of bowls and dishes. There were also found sherds of a plain red ware, in a coarser fabric, being fragments of jars and vases; a fine brownish-red ware, indicating all the shapes and designs of the Painted Grey Ware; a fine red ware with an evanescent black slip in the shape of the dishes with sagger-base, recalling the double-slipped ware of Ujjain; and the dish and bowl in plain grey ware. It is interesting to note that the Painted Grey Ware had patches of brown, as present on the comparable pottery from Hastinapura.

A shape particularly worth mentioning is the dish-on-stand in plain red ware indicating the continuity of a tradition which was deep-rooted in the Harappan and later chalco-lithic cultures. It may be recalled that a corrugated stem in grey ware was also found at Hastinapura. Though no structures were met within the limited area of the deep digging, mud-floors with post-holes provided an index to housing. Mud-bricks were known and a broken burnt brick (22 cm. X 6.25 cm.) was noticed.

The use of metals, both copper and iron, was clearly evidenced.

The material culture of the Period was further indicated by terracotta animal figurines and spindle-whorls.

A terracotta object of particular interest, possibly used as a pounding or polishing equipment, showed flattened bits of stones fixed in a mosaic pattern on blocks of clay, in the shape of truncated bicones. Similar objects have been found earlier in corresponding cultural levels at Hastinapura, Rupar and Alamgirpur.

Period II, represented by a 1.22-m. thick deposit, including its overlap with the preceding and succeeding Periods, was characterized principally by the use of the N. B. P. Ware, in its diversity, along with the concomitant assemblage of bowls and dishes in thick grey ware, and the carinated *handis* and pear-shaped vases in red ware.

No structural remains of this Period were encountered in the area under excavation, though the use of burnt bricks was attested. Mud-floors, as in Period I, indicated common dwellings, with evidence of multiple ovens (pl. XXVII A).

The objects of material culture included : copper rings, nails and pins; iron fragments; beads of terracotta and carnelian; terracotta sling-balls, bangles, wheels, and figurines, both animal and human; and pestles and querns.

Period. III, represented by a 2-m. thick deposit, was characterized by the familiar Kushan bowl, sprinkler, inkpot-lid and the jars, sometimes spouted, with stamped designs (pl. XXX) in the shape of *triratna,* spoked wheel, sun-symbol, seven-pointed star, festoons, sigma and radial lines around the shoulder. The fabric exhibited a sprinkling of mica in the paste. Among other objects mention may be made of copper coins including those of the Kushans, the Panchalas and Achyu, generally identified with Achyuta, defeated by Samudragupta in the fourth century A.D.

Burnt bricks in mud-mortar were freely employed in the construction of houses (pl. XXVII B), which followed the same cardinal alignment throughout the successive levels. The rooms, however, were not very large, measuring on an average 3 X 2.50 m. in the extant remains. The bricks measured as follows:(i) 43.7 X 26.67 X 5·08 cm.; (ii) 41.6 X 22.67 X 5.71 cm. ;(iii) 44.97 X 25-4 X 6.35 cm.; and (iv) 25.4 X 25.4 X 6-35 cm. Towards the end of the Period brick-bats were employed in building houses. The upper levels were also disturbed by robbers' pits.

The other finds included: objects of iron, mostly found in fragments, and copper, the latter being in the form of pins, beads, awls, coils, antimony-rods, rings and a pendant, besides several non-descript fragments; terracotta human and animal figurines ; beads of terracotta and semiprecious stones; spindle-whorls; terracotta bangles; and bone arrowheads.

Considerable light was thrown on the fortification enclosing the site (pl. XVIII A and B). Initially a rampart was built of mud in the beginning of Period III as evidenced by sherds of the Painted Grey Ware, and the N.B.P. Ware and its associates in its makeup. In the second phase it was considerably damaged and was, therefore, reinforced at the vertex by the construction of a brick wall, 4.98 m. broad and 2.59 m. high, running, throughout its length. To economize the use of bricks, rectangular gaps (pl. XXIX), measuring 2.13 X 1.32 m., were left in the brick wall at regular intervals, and the openings filled with rubble and clay. In the third phase the brick wall was given the protection of a mud-cover, as its first line of defence. When it wore off in course of time, it was buttressed at intervals by another packing in the fourth phase. As even this stratagem did not withstand scouring, gaps in the outer wall or the mud-packing were filled with the construction of fragmentary walls of brick and brick-bats in the fifth phase. The excessive vulnerability of this side may account for the ultimate screening off of the north-east part of the fortified area by a partition-wall and the concentration of later habitation in the remaining part of the area.

66. EXPLORATION IN DISTRICTS BASTI, DEORIA AND GORAKHPUR.—The University of Gorakhpur, under Dr. R. B. Singh, explored some sixty-four ancient sites in Tahsils Bansi and Khalilabad of District Basti, Padrauna of District Deoria and Bansgaon and Farenda of District Gorakhpur and found: (i) microliths at Chhapava in District Basti; (ii) black-and-red ware at Babukasiktaur, Bakarganj, Bhaisa-Mafi, Itauva, Maghar and Pauna in District Basti, Hauda-Pokhara in District Deoria, and Asaunji, Babhnauli, Barahajpar, Barhayapar, Baryipar, Chandpur, Dughara, Duruyi, Ghorhaloton, Gopal-pur, Karahal, Kotawa, Kotiya, Madaraha, Mahadeva, Mau-Buxur, Mehada, Mukundevar, Pakari-Dubey, Rajdhani, Sikariganj, Sonbarsa, Trilokapur, Unchgaon and Usarain in District Gorakhpur; (iii) the Northern Black Polished Ware at Abbasganj, Bahukasik-taur, Bakarganj, Bharvalia-Babu, Kopia and Udsara in District Basti, and Araon-Jagdish, Barhayapar, Bharvalia and Jaddappatti, Dumhara, Dhuriyapar, Jauharabad, Jhauan, Madaraha, Mau-Buzurg, Pakari-Dubey, Sikariganj, Trilokapur and Uruva in District Gorakhpur; (iv) silver punch-marked coins at Parasa-Dayaram and Rajdhani; (v) remains of *stupas* and *chaityas* at Khadkhoda and Sahajanava; and (vi) medieval glazed ware at Bankati, Barhayapar and Mahadeva in District Gorakhpur. Besides, quite a large number of terracotta human and animal figurines, Gupta and medieval sculptures and Kushan coins were collected from the various sites.

67. EXPLORATION IN DISTRICT BULANDSHAHR.—Shri R. P. Sharma of the North western Circle of the Survey discovered a Painted Grey Ware site at Tajpur-Piaoli and a grey ware site at Kot. Early historical and medieval sites were also reported by him from Aurangabad, Bhangel-Begumpur, Bhogpur, Chipiyana, Dadri, Ghori-Bachchera, Gujar-pur, Janpat, Nagla-ki-Rani and Ruhullahpur.

68. EXPLORATION IN DISTRICT DEHRA DUN.—Following a press-report on the find of ancient remains of a Kushan monastery, Shri M. N. Deshpande of the North-western Circle of the Survey inspected a site in the township of Antibiotic Factory at Rishikesh. The partly-excavated mound revealed the remains of brick structures rising to a height of about 1.20 to 1.50 m. The supposition that it may perhaps form part of a Buddhist monastery was further strengthened by the find of wedge-shaped bricks, probably used in the construction of a *stupa* or the apsidal end of a *chaitya-hall.* The size of other bricks used in the construction was 36 X 21 X 6 cm. The associated pottery was a dull-red ware assignable to the early centuries of the Christian era.

Near the confluence of the rivers Rambha and Ganga outside the Factory area, ruins of a massive brick fortification were noticed. The size of the bricks used corresponded exactly with that of Group A of Period IV of Hastinapura.

69. EXCAVATION AT ATRANJIKHERA, DISTRICT ETAH.—In continuation of last year's work (1962-63, p. 34), the Aligarh Muslim University resumed its excavation at Atranji-khera, the work being directed by Shri R. C. Gaur under the supervision of Professor S. Nurul Hassan. The objective of this season's work was twofold: (i) to determine the extent and nature of the cultural equipment of the occupation prior to the Painted Grey Ware; and (ii) to ascertain the continuity or otherwise in the occupation of the site.

The excavation revealed a succession of three periods, distinguished respectively by the occurrence of the Ochre-coloured Ware, the black-and-red ware and the Painted Grey Ware. The black-and-red ware, following the Ochre-coloured Ware and preceding the Painted Grey Ware, was recorded only this year, thus necessitating the redesignation of the Painted Grey Ware period as Period III instead of last year's Period II.

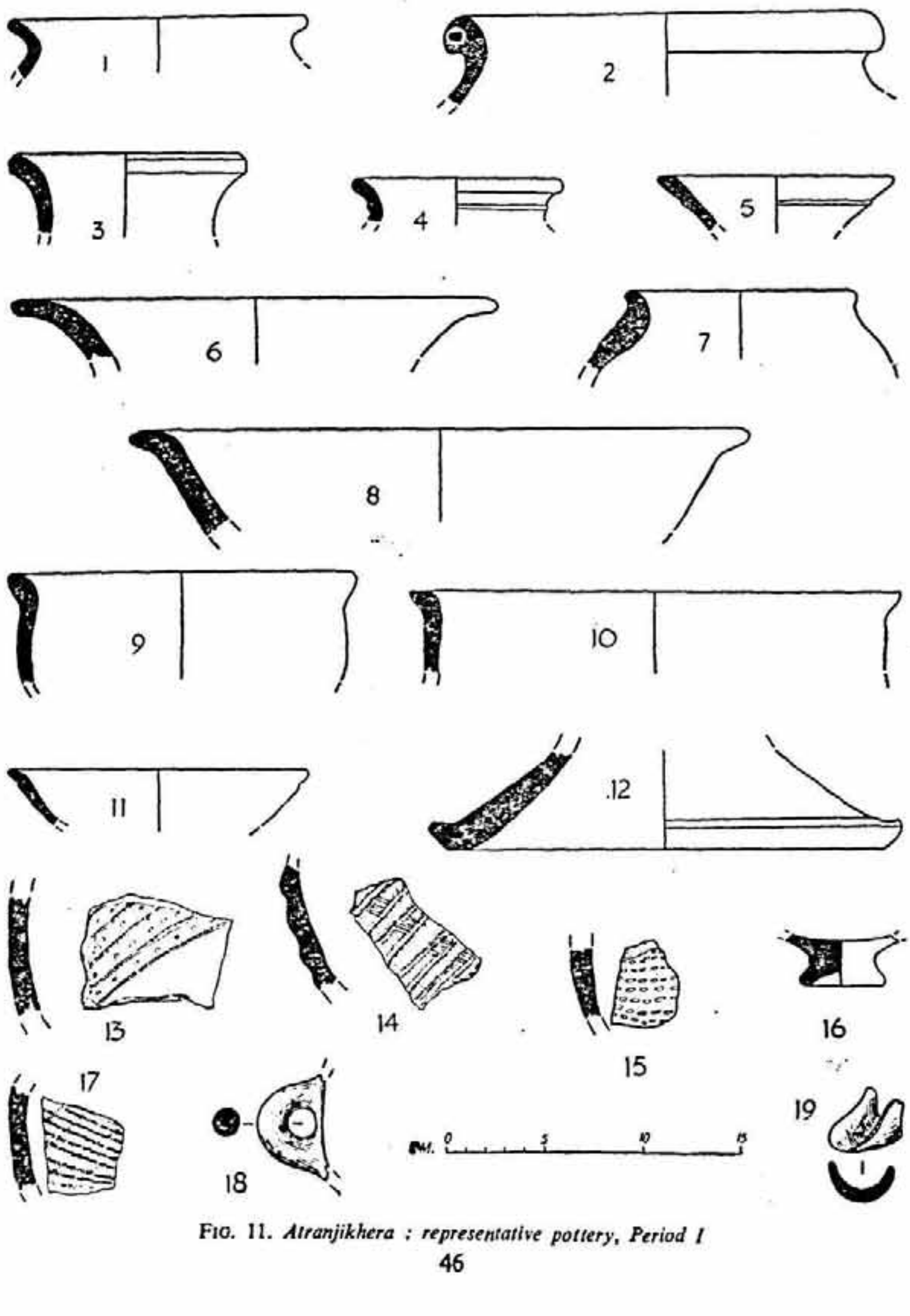


FIG. 11. *Atranjikhera : representative pottery, Period I*

Period I, ascribable to the middle of the second millennium B.C., was represented by a 0.80 to l.50-m. thick deposit overlying the natural soil in the north-eastern part of the mound, corresponding deposits having been washed away on the eastern, southern and western sides, leaving distinct water-marks. Within the thickness of this deposit no regular signs of habitation were noticed. Soil-analysis indicates that the area had been flooded and remained waterlogged for a considerable period. A distinctive feature, however, was the occurrence of a horizontal band of rammed earth mixed with *kankar* and potsherds, dividing the deposit into two distinct layers, the upper layer being thicker than the lower.

The associated pottery belongs to the class of the Ochre-coloured Ware with such distinguishing features as indifferent firing, thick and porous sections, rolled edges and a bright ochreous wash which easily rubs off. Amongst shapes (fig. 11) mention may be made of the dish-on-stand, pedestal (apparently of the miniature bowl), handle of different shapes, channel-like spout of some large vessels, deep basin or bowl and vase with chord-like collar at the neck. This pottery bears a striking resemblance to that obtained from Hastinapura, Bahadarabad, Bhatpura, Manpur and Ambkheri (below, p. 56). A special feature of the Ochre-coloured Ware at this site was the incised decoration showing lines on applied chords, dashes, deep dots and notches, arranged in straight, oblique, angular or wavy lines.

Besides pottery, the only finds obtained in this deposit comprised sandstone pieces, perhaps the lower part of a crushing-stone and a terracotta bead. There was a break in occupation after the termination of this Period.

Period II, *of circa* latter half of the second millennium B.C., was distinguished by the use of black-and-red ware, microlithic flakes and cores (pl. XXXI A) and copper. While on the northern side of the mound the strata belonging to this Period were seen interspersed between the deposits of the Ochre-coloured Ware (Period I) and Painted Grey Ware (Period III), on the southern side they immediately overlay the natural soil, the occupation of the Ochre-coloured Ware being absent on that side. The deposit of this Period, ranging from 15 to 40 cm. in thickness, showed signs of regular habitation in the shape of hearths, one of which might have been a sacrificial pit.

The ceramic content (fig. 12) included the black-and-red, black-slipped, grey, red-slipped as well as plain red wares. Of these, the black-and-red and the black-slipped wares, which constituted nearly 45 p.c. of the total yield, were usually of a fine fabric and were represented mostly by the bowl and dish. Some shapes, however, were exclusive to each ware. No instance of painting on the black-and-red ware was noticed. Most of the shapes of this ware were also different from those obtained from the other sites of chalco-lithic assemblage yielding the black-and-red ware. Besides, a coarse and perhaps handmade black-and-red ware was also attested. A few pots in this ware appeared greyish in surface-colour, largely due, perhaps, to ill-firing. The red ware, both slipped and un-slipped, was represented in various shapes including the vase, bowl, basin, dish, miniature bowl, etc. A few bowls bore painted decoration.

The other finds obtained in the deposits of this Period comprised: carnelian and shell beads; two copper objects including an ear-ring; a bone comb; fragment of a pestle; and a large number of flakes of chalcedony, agate, etc., and cores with ripple flaking.

The continuity or break in occupation at the site after this Period is still under investigation. In the meantime it must be stated that while the black-and-red and black-slipped wares continued, the flake-industry was completely absent in the succeeding Period, which *inter alia* also saw the emergence of the new ceramic tradition represented by the Painted Grey Ware as also the introduction of iron.

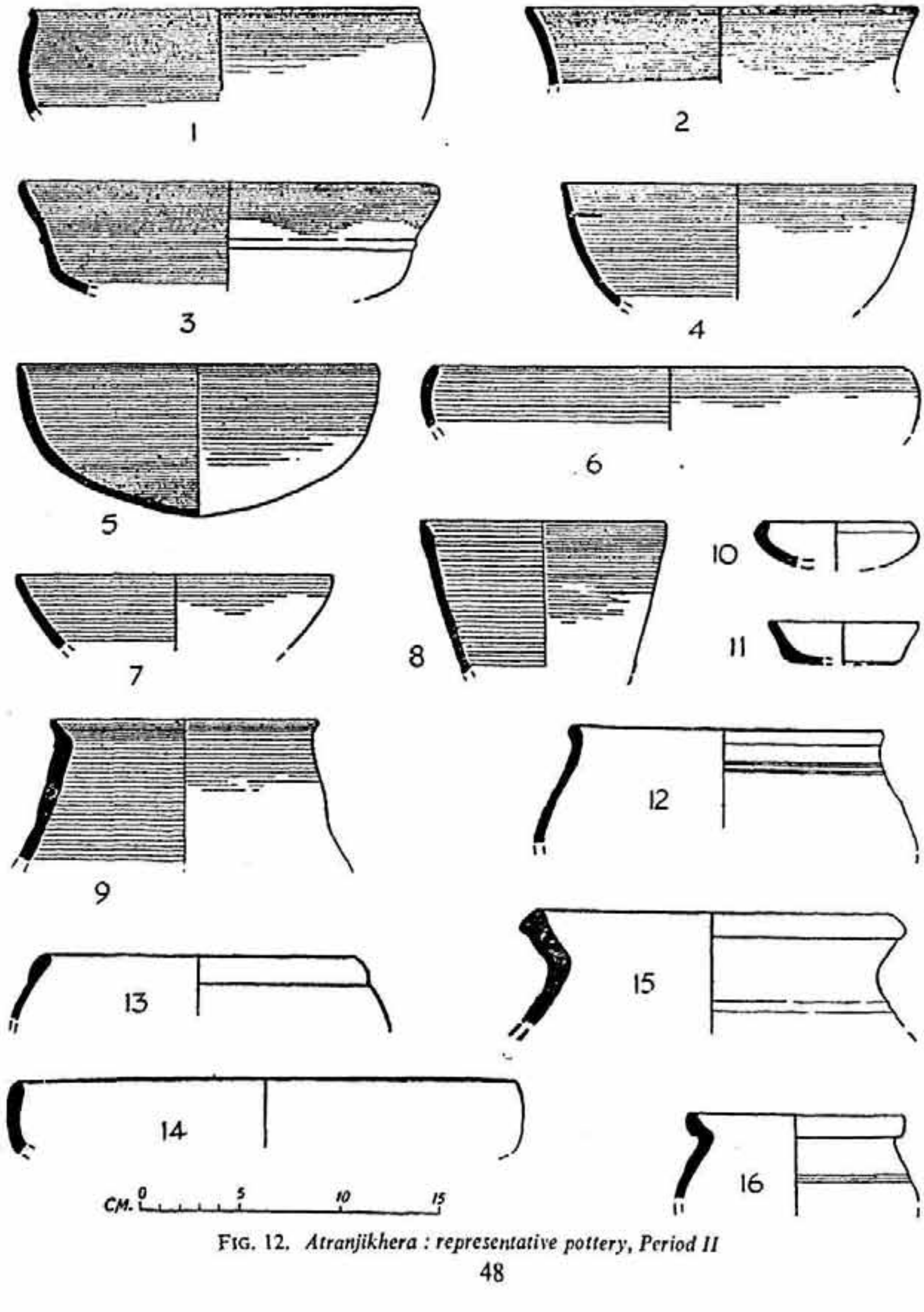


FIG. 12. *Atranjikhera : representative pottery, Period II*

Period III, *circa* 1200-600 B.C., was characterized by the use of the more familiar Painted Grey Ware. As many as five floor-levels were identified. At various levels including the lowest, hearths, usually half-oval in shape and 25 to 30 cm. in height, were also recorded. In addition, some circular 'fire-pits', the exact purpose of which could not be determined, were also noticed, their frequency increasing in the upper levels. By the occurrence inside these pits of vessels, clay cones, and iron tools, their function as furnaces for the blacksmith could perhaps be inferred. Among structural remains, a noteworthy find was a pottery-kiln yielding numerous pots lying *in situ.*

Besides the characteristic Painted Grey Ware, plain grey, black-and-red, black-slipped, red-slipped and coarse red wares were also in use. It is significant to note that while some of the shapes of the black-and-red ware were similar to those obtaining in Period II, there were a few others which were comparable with those of Period II at Hastinapura.

Among the finds, special mention may be made of the occurrence of iron objects (pl. XXXII A) throughout the occupation of this Period, the noteworthy objects being spearheads,- arrow-heads, knives, chisels, hooks, etc. Also were found: copper objects such as rings and bangles, hooks and chisels; terracotta discs, bearing incised designs (pl. XXXII B); bone objects (pl. XXXI B) such as styluses, awls, knitting-needle, gamesmen or weights, etc.; net-sinkers; pestles; and a large number of beads of terracotta and semi-precious stones.

On the basis of the study of the floor-levels and the analysis of the finds including pottery, this Period has been broadly divided into two phases, the earlier of which represents the true Painted Grey Ware and the later, the late Painted Grey Ware. The former was further subdivided into four sub-phases. In the late Painted Grey Ware phase, a decadence in the ceramic industry was markedly discernible both in fabric as also in execution of designs. This class of pottery, roughly comparable ;with that obtaining at Kausambi in Period II, continued in the early levels of the succeeding Northern Black Polished Ware occupation (Period IV), of which not much area was excavated this season.

70. EXPLORATION IN DISTRICT JHANSI.—Dr. R. V. Joshi of the Prehistory Branch of the Survey, assisted by Shri B. P. Bopardikar and Shri M. V. N. Krishna Rao, located several Early, Middle and Late Stone Age sites around Lalitpur, on the terraces of the Betwa at Nayagaon, Paraunda and Rajghat. The Shahzad *nadi*, a tributary of the Betwa, and its affluent Biana nullah were explored in the upper reaches at Bansi, Berwara, Panari, Patora-Kalan and Patora-Khurd (fig. 13).

71. EXCAVATION AT LALITPUR, DISTRICT JHANSI.—The Prehistory Branch of the Survey, under the direction of Dr. R. V. Joshi, assisted by Shri M. V. N. Krishna Rao, Shri B. P. Bopardikar and Shri M. U. Qureshi, conducted excavation at some of the localities near Lalitpur with a view to tracing the extent and richness of the implementiferous deposit noticed earlier by a team of the Deccan College Post-graduate and Research Institute, Poona (1961-62, p. 57).

The excavation at Locality I (Chhatrapal temple area) (pl. XXXIII A) revealed a very disturbed tool-bearing deposit without any factory-debris. Only three implements on quartzite were obtained in the excavation.

Locality II (pl. XXXIII B), lying at the head of a tributary of the Biana nullah, which drains into the Shahzad *nadi*, a major affluent of the Betwa river, showed a tool-spread in the cultivated fields mostly on the left bank of the stream. The implementiferous

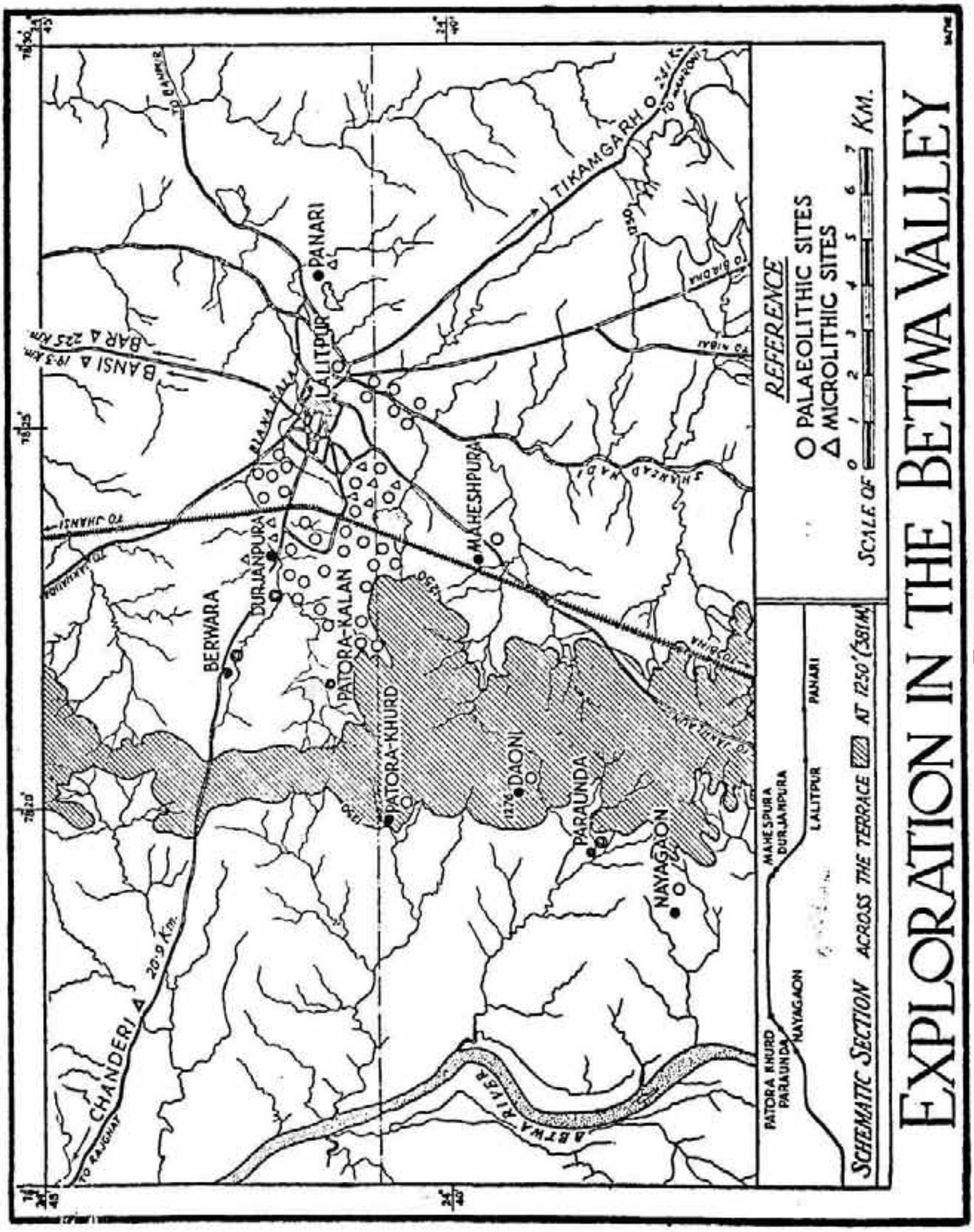

EXPLORATION IN THE BETWA VALLEY
REFERENCE
O PALAEOLITHIC SITES
Δ MICROLITHIC SITES
SCALE OF KM.
SCHEMATIC SECTION ACROSS THE TERRACE AT 1250' (381M)
TIKAMGARH
PANARI
LALITPUR
BANSI
BAR
DURJANPURA
BERWARA
PATORA-KALAN
PATORA-KHURD
MAHESHPURA
DAONI
PARAUNDA
NAYAGAON
CHANDERI
BETWA RIVER
TO JHANSI

FIG. 13

bed of *kankar* mixed with brownish earth and sub-rounded gravel is very thin and practically exposed to the surface. Numerous tools, both fully and partially prepared, occurred on the top of the black soil or little submerged in it. The implements were mostly made on the Bundelkhand granite which contains a fair amount of pink felspar and very little dark accessory minerals with the result that this rock has acquired all the physical characters of a pink quartzite or sandstone. The collection contained an appreciable number of cores and artefacts (pl. XXXIV) made of quartzite, sandstone and quartz. This locality lay at the eastern upper slope of the Betwa terrace confined to 1250 ft. (381 m.) contour. The terrace had a wide extent and was composed of quartzite and granite pebbles. The western slope of this terrace was towards the Betwa; this was characterized by the predominance of the tools, worked on quartzite, while on the eastern slope tools of granite were common. The Bundelkhand granite is the local geological formation of the area, but nowhere were tools noticed in the vicinity of the granitic exposures; nor were they met with in association with the outcrops underlying the thick surface-deposit in the excavation.

Huge bouldery outcrops of the Bundelkhand granite occur on the banks of the Biana nullah around village Durjanpur, 2 km. north-east of Lalitpur Railway Station, in the vicinity of which were found several microliths. The adjoining fields are covered with a reddish clay, which also yielded microliths.

A trench measuring 2 X 2 m. was excavated on the right bank of the Biana nullah. The following sequence was revealed from bottom upwards : (i) bed-rock at a depth of 70 cm.; (ii) compact reddish-yellow soil, yielding microliths; (iii) slightly-compact reddish-brown soil, also yielding microliths; and (iv) slightly-loose reddish humic soil as the top layer. The microliths were mostly made on chalcedony and agate and rarely on crystalline quartz and comprised small blades, flakes, cores, scrapers and points of non-geometric type.

72. EXCAVATION AT LEKHAHIA, DISTRICT MIRZAPUR.—In continuation of last year's work (1962-63, p. 37), the University of Allahabad undertook excavation of rock-shelters and open-air settlements at Lekhahia, 69 km. east of Mirzapur. The work was conducted by Shri V. D. Misra working under the supervision of Professor G. R. Sharma. Two rock-shelters, labelled LKH-RS 1 and LKH-RS 2, and three open-air settlements, called LKS-1, LKH-2 and LKH-3, were excavated.

The two cuttings LKH-1 and LKH-3, situated to the south of the rock-shelters, yielded almost identical results. The total accumulation of over 1 m. above the bed-rock was composed of nine layers, which, from the evidence of colour, composition, etc., seemed to have been deposited under different climatic conditions.

Layer 9, composed of disintegrated bed-rock *in situ* mixed with a thin accumulation of lateritic pellet, did not yield any tool. Layers 8 and 7 were composed of lateritic pellets with loose yellowish soil. Layer 6 contained only a few stone pieces and was completely devoid of lateritic nodules. The composition and colour of layer 5 represented a stage of transition. Layers 4 to 1 were laid under conditions of growing aridity, borne out by the general colour and character of the layers and by the progressive increase of sand-particles.

The implementiferous deposit, layers 8 to 1, afforded evidence for identifying four stages in the evolution of the microlithic industry at the site. Tools from layers 8 and 7, consisting of parallel-sided blades, blunted-back blades, points, lunates and scrapers and a large number of cores and unfinished tools represent the earnest phase of the

microlithic industry in the area. Tools from layers 6 and 5 consisted of both the non-geometric and geometric types with the former predominating. It is significant that these two layers did not yield any pottery. Tools from layers 4 to 1 not only represented geometric types like triangles and trapezes but were also associated with pottery, the amount of which showed a progressive increase. Within this assemblage itself, two stages could be recognized, those from layers 4 and 3 being larger-sized as compared with those from layers 2 and 1.

These findings were also partly confirmed by the excavation at LKH-2, laid to the north-west of rock-shelter 1. The occupation-deposit, comprising four layers, 3 B, 3 A, 2 and 1, was about 47 cm. in thickness. Save for the top layer 1, layers 2, 3 A and 3 B represented the first phase noted above and yielded pre-pottery non-geometric tools. Layer 1, too, did not yield any pottery, but seemed to be associated with the geometric types as evidenced by the find of a triangle.

In summary, the excavation of the three open-settlements indicated the following sequence: Phase I, non-geometric pre-pottery heavily-patinated microliths; Phase II, geometric microliths without pottery; Phase III, geometric microliths with pottery; and Phase IV, geometric and diminutive microliths with pottery.

The rock-shelter, where excavation was undertaken, showed paintings which, by their style, theme, colour and technique, could be divided into more than one group. While some of the paintings were only in outlines, others depicted hatched or solidly-filled bodies. A cutting laid out towards the inner half of the shelter revealed 42-cm. deep occupation-strata. Seventeen skeletons, each laid in an extended position in a grave, the outlines of which were clearly marked in many cases, were exposed. All of them yielded plenty of microlithic tools, flakes, cores, etc., evidently used as grave-goods. On the basis of stratification, actual superimposition of one burial upon another and overlapping of the graves, eight phases of occupation could be recognized, from top downwards : Phase I, skeleton 2; Phase II, skeleton 3; Phase III, skeleton 4; Phase IV, skeletons 5, 8, 9 and 10; Phase V, skeletons 11, 12 and 14; Phase VI, skeletons 13 and 15; Phase VII, skeleton 16; and Phase VIII, skeleton 17. Skeletons 1, 6 and 7 were found in a very fragmentary condition and their stratigraphy was so disturbed that they could not be assigned to a definite phase.

With the exception of skeletons 2 and 12 all were oriented in an east-west direction with the head towards the west. Skeletons 2 and 12 were oriented north-south with the skull of the former towards south and that of the latter towards north. According to the associated microlithic industry, skeleton 17, being the earliest in the series, belonged to the non-geometrical pre-pottery phase of the occupation. The rest of the skeletons were associated with both non-geometric and geometric microliths.

The bones of skeleton 17 showed a heavy incrustation. Associated with skeletons 3, 11, 12, 13 and 14 were found ochre and weathered lateritic nodules. The discovery of this material together with microlithic graves and bone tools would perhaps suggest a link between the authors of the paintings and the people buried in the shelters.

The occupation in the shelter was later disturbed by extensive pits yielding pottery together with copper beads and arrow-heads. This material has a close resemblance to that recovered from the megaliths at the foot of the Kaimur, only 16 km. from the shelter.

LKH-RS 2, situated to the northern side of LKH-RS 1, is a small shelter with an occupation-strata of only 20 cm. in depth. Excavation revealed that the shelter had been occupied by the people using geometric microliths and pottery.

From a pit cut into the bed-rock at LKH-RS 1 were obtained two human skulls and a mandible of an animal in an advanced stage of fossilization. Stratigraphically this pit preceded the series of burials and the microlith-using occupation of the rock-shelter.

73. EXPLORATION IN DISTRICT MORADABAD.—Professor K. D. Bajpai of the University of Saugar made a survey of an ancient site at Bhaintari, 6.4 km. to the north-east of Chandausi in District Moradabad, and collected pottery comprising the Painted Grey and Northern Black Polished Wares, besides black-slipped, red and chocolate-slipped red wares. The red ware also bore paintings executed in black pigment over the slipped exterior, the designs being confined to horizontal bands and criss-crosses in between.

74. EXPLORATION IN DISTRICTS MUZAFFARNAGAR AND SAHARANPUR.—In continuation of last year's work (1962-63, p. 36), Shri M. N. Deshpande, assisted by Shri S. P. Jain, Shri K. N. Dikshit and the students of the School of Archaeology of the Survey, resumed exploration along the high banks of rivers Budhi-Ganga and Kali-Nadi. The exploration covered the area from Muzaffarnagar to Roorkee, a distance of about 60 km. and brought to light sites of different categories, viz., Ochre-coloured Ware, Painted Grey Ware, black-slipped ware, Northern Black Polished Ware, Sunga-Kushan red Ware and medieval glazed ware.

An assessment of the material revealed that the sites of Gadharona and Ambkheri-2, both in Tahsil Roorkee, District Saharanpur, with their new types in Ochre-coloured Ware held out possibilities for a relationship with the Harappan ware. The types in question included the dish-on-stand, basin, trough, ring-stand, vase with flanged rim, lid with central knob, handle, and miniature cup and vase. Among the other important antiquities were barrel-shaped beads of banded agate and a terracotta figurine from Gadharona and cart-wheels with central hub and a terracotta animal figurine from Ambkheri-2. These discoveries have opened a new horizon for the study of this culture in its wider context. For excavation at Ambkheri, see below, p. 56.

Among the Painted Grey Ware sites, Nurnagar and Sikri are worth mentioning. A terracotta female figurine with prominent bust, a terracotta weight with three parallel lines, a bone needle, terracotta beads in various shapes and a thick red-ware sherd with graffiti were also collected from the former site. Sikri, a large flat mound with an occupational deposit of about 4 m. also yielded a few sherds of the Ochre-coloured Ware.

From Rai a thick grey-ware sherd with graffiti in Brahmi script was obtained. Disal-Pur-Khera yielded pottery and antiquities of the Sunga-Kushan period. Among the late medieval monuments, a living mosque at Jorasi was found to contain an inscription indicating its construction in the time of Aurangzeb.

Following is the list of the explored sites.

*(OC=Ochre-coloured Ware; PG=Painted Grey Ware; G=grey ware; NBP=Northern Black Polished Ware; BS=*black-slipped ware; R=Sunga-Kushan red ware; and M=medieval glazed ware.)*

District	*Site*	*Tahsil*	*Ware and other associated finds*
Muzzaffarnagar	Bhopa	Jansath	M
	Chhachrauli	,,	M
,,	Firozpur	,,	M
,,	Shukartar Bangar	,,	M
	Sikri	,,	PG, G, R, M

District	*Site*	*Tahsil*	*Ware and other associated finds*
Muzzaffarnagar	Baheri (Disal-Pur-Khcra)	Muzzaftarnagar	Coarse G, R and M, terracotta objects like car-ring, fragmentary animal figurines, fragmentary plaque with a foot-impression, dabbcr-handlc.
	Chandan	99	M, terracotta beads, etc.
	Doheti	99	M
	Jamalpur	99	M
	Kambhcra	99	M
	Mirzapur	99	M
	Nurnagar	99	PG, G, NBP, R, M, terracotta figurine, dabber, beads, gamesman, a tablet with three parallel lines, probably a weight, a bone needle.
«i	Rai	91	G, BS, R, a thick grey ware sherd with graffiti in Brahmi script.
	Rampur	99	PG, G, M, terracotta animal figurine, *ghata*-shaped bead.
tl	Suahcri	99	M
99	Tughlaqpur	99	M
Saharanpur	Gopali	Deoband	M
99	Kenduki	99	G, R, M
99	Rajupur	99	Coarse G, M
99	Ransura	99	M, terracotta ball, gamesman
19	Tigri	99	R, terracotta animal figurine and bead
19	Unchagaon	99	G, R, M
99	Arabkheri—1	Roorkee	PG, G, R
99	Ambkheri—2	99	OC, washed G, fragmentary terracotta animal figurines and cart-wheels
t9	Gadharona	19	OC, including a handle, washed G, barrel-type beads of banded agate, terracotta figurine
99	Ghosipura	99	M
II	Harjauli Jat	99	M
•1	Jorasi	99	M, inscription of the time of Aurangzeb
II	Kagwali	99	R
•9	Shikarpur	99	OC, washed G
99	Thataula (Khorapur Kalera)	99	OC, PG, washed G, M, terracotta flesh-rubber
99	Taoda Kalianpur	99	M

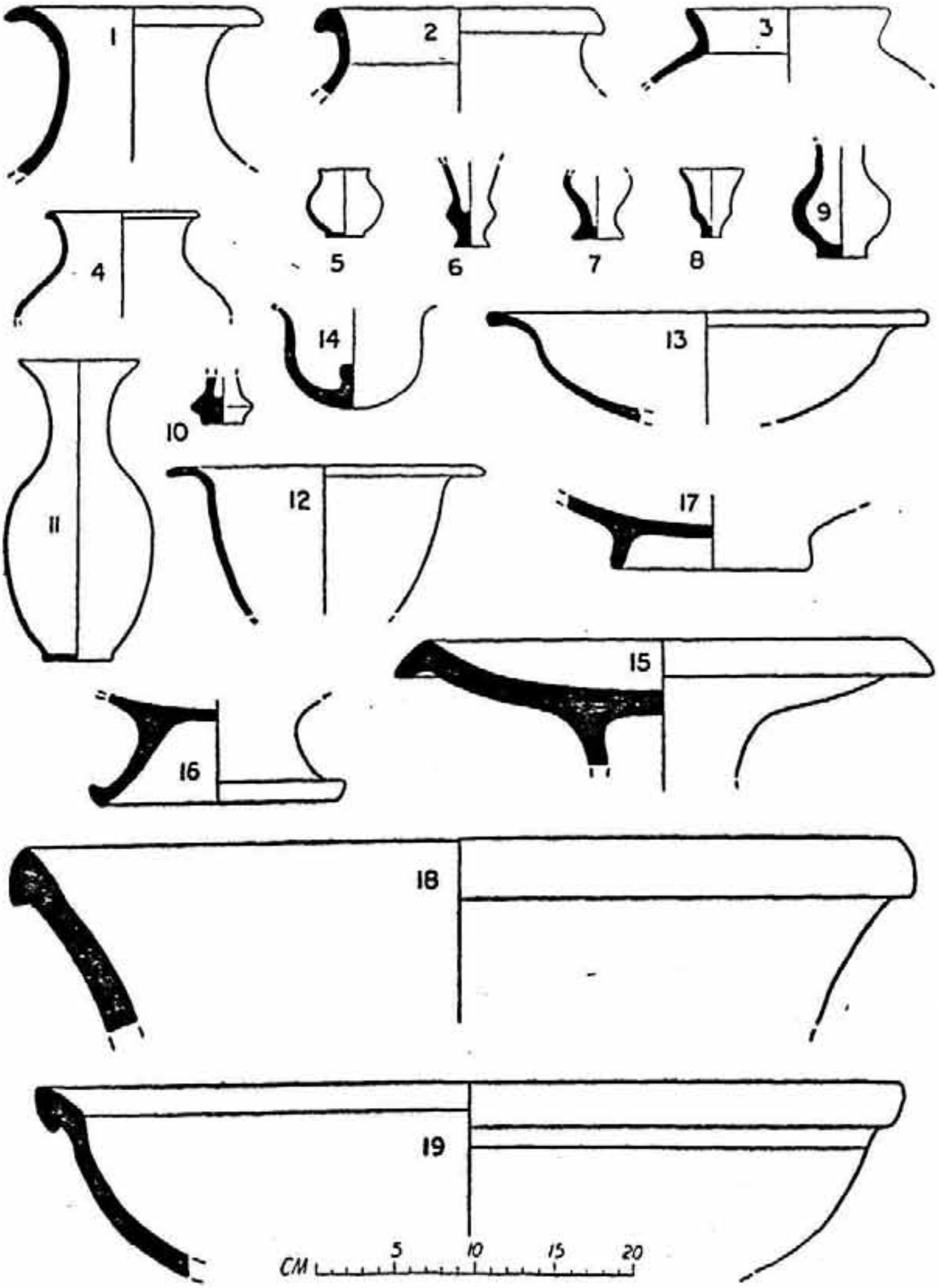


FIG. 14. *Ambkheri : representative pottery*

In the course of exploration in District Saharanpur, Shri Shankar Nath of the North-western Circle of the Survey discovered the Painted Grey Ware and other associated wares at Bakarka, Chak-Patna, Firozabad, Manakpor and Paj-Bangar.

75. EXCAVATION AT AMBKHERI, DISTRICT SAHARANPUR.—One of the explored mounds, called Ambkheri-2 (above p. 53), to the north-west of the village, was taken up for excavation by the North-western Circle of the Survey under Shri M. N. Deshpande, assisted by Shri K. N. Dikshit, Shri Shankar Nath, Shri H. K. Narain and Shri R. P. Sharma. In all thirteen trenches, each 5 m. square, were laid out. Excavations revealed a single-culture occupation yielding the Ochre-coloured Ware. Many hitherto unknown pottery-forms and antiquities having affinities with the Harappan were brought to light. No copper objects were found in the excavated strata.

The Ochre-coloured Ware seemed to have been inadequately fired and was usually bereft of any slip. It would, however, be incorrect to say that there was no surface-dressing as a few sherds with slip were also encountered. Laboratory-tests confirm that the pottery was ill-fired and that the slip was not a homogeneous part of the fabric. Noteworthy types (fig. 14) in thick fabric included the large trough, bowl-like lid with central knob, dish-on-stand, vase with flanged rim and oval body, ring-stand, basin with undercut rim and vase with chord-design, mat-impression and horizontal raised bands on the exterior. Many shapes in thin fabric were also noticed. These included the long-necked flask with flaring rim and flat base, lid with central knob, bowl with slightly out-turned rim and bulbous body and miniature cup and vase. Associated with this pottery was a washed grey ware represented in thick, medium and thin fabric. The range of shapes was very limited indeed and consisted of the pedestalled miniature cup and vase. Other finds obtained included : a solitary carnelian bead; terracotta objects like cart-wheel with a central hub; animal figurines including humped bull; a fragmentary cake with oval depressions; and stone saddle-querns with pestles. Remains of a brick-kiln and a hearth were also noticed.

The Ochre-coloured Ware from Ambkheri, while sharing the fabric of the corresponding pottery from Atranjikhera and Bahadarabad, differs from it in form. On the other hand, the assemblage shows certain affinities with the Harappan material of Alamgirpur, Bara, Bargaon and Rupar. Among the probable links may be mentioned terracotta cakes, terracotta humped bull and a few pottery-shapes like the dish-on-stand, lid with central knob and chord-impressed and incised decoration.

From the foregoing details, it will be seen that the site is likely to represent a degenerate phase of the Harappa culture and as such provides an important link in bridging the gap between the Harappa and the Painted Grey Ware cultures.

76. EXCAVATION AT BARGAON, DISTRICT SAHARANPUR.—The North-western Circle of the Survey, under Shri M. N. Deshpande, assisted by Shri K. N. Dikshit and Shri Shankar Nath, undertook excavation at Bargaon, situated 24 km. north of Saharanpur on the left bank of the Maskara, a tributary of the Yamuna.

Excavation revealed a 1-m. thick occupational deposit yielding the Harappan ware along with the unslipped Ochre-coloured Ware. The principal shapes included: the dish-on-stand; bowl with featureless rim; lid with central knob; Indus goblet; ring-stand; miniature pedestalled cup; long-necked globular flask; and vase with chord-impressed designs and incised bands on the exterior. Some of the pottery was also painted (pl. XXXV), the designs being confined to cross-hatched triangles set within horizontal bands and wavy lines in the upper levels, and only horizontal bands in the lower ones. Besides,

incised decoration showing deeply-cut chevrons (pi. XXXVII B), wavy lines drawn by a comb-like instrument and small oblique strokes were also noticed. Other noteworthy finds were: copper rings (pl. XXXVI A); chert blade (pl. XXXVI B); weights; bull-headed terracotta toy-carts (pl. XXXVI C); terracotta and faience bangles, the latter showing oblique incised decoration; terracotta toy-cart wheel with a central hub (pl. XXXVI B and XXXVII A); and terracotta cakes with finger-impressions (pl. XXXVII A). No structure was encountered in excavation.

The pottery and other finds from this site call for a fresh thinking as regards the relationship of the Harappan and the so-called Ochre-coloured Ware cultures.

77. EXCAVATION AT HATHINIA-PAHAR, KAKORIA AND BHADAHAWAN HILLOCK, DISTRICT VARANASI.-- In continuation of the work done last year (1962-63, p. 39), the University of Allahabad resumed excavation of the megalithic monuments (pl. XXXVIII A) and habitation-site on the north-western slope of the Hathinia-Pahar. In addition, a few other megalithic monuments at the eastern slope of the Bhadahawan hillock were also taken up. The excavation was conducted by Shri V. S. Dubey, working under the supervision of Professor G. R. Sharma. Five megalithic burials, labelled Megs. VIII-XII, were opened. Of these, three were situated at the foot of the Hathinia-Pahar on the right bank of the river Chandraprabha and the remaining two at Bhadahawan on the left bank of the same river. Typologically four of them were cairn-circles and one a cist.

A common feature of the cairn-circles was a rectangular pit, oriented east-west and cut into the hard natural soil to an average depth of 1.3 m. The bulk of the grave-goods, consisting of pottery and beads, in addition to skeletal remains, and in case of Meg. XI a microlith, were placed immediately upon the pit-floor to which a cushion of red sand had been given. Only in Meg. VIII the grave-goods were arranged at different depths. It was also observed that there was no uniformity in arranging the offering inside the grave. At the end of the ritual, the pit was generally covered with the selfsame earth, but in Meg. I excavated last year and Meg. XI opened this year, it was noticed that some foreign material in the shape of black soil was also used as a filling. Finally, the whole ritual was completed by erecting a cairn held at the periphery by a stone-circle of varying diameter.

Only one specimen, Meg. X, of the second category was opened this year. The excavation revealed a cist within a grave-pit, lying almost in the centre of the stone-circle (pl. XXXVIII B). The cist was oriented east-to-west and measured l.82 X .96 m. The sides of the cist-chamber were made of small stone pieces resting directly against the side-walls of the grave-pit. Among the finds obtained were four stone slabs of indeterminate use, a fragmentary rim of black-and-red ware and a few other small fragments of pottery. No skeletal material was recovered.

Out of five monuments opened this season, only one, Meg. IX, yielded skeletal remains and that too in a highly-damaged state. The bones were found placed side by side in parallel lines along the southern edge of the grave-pit.

With a view to confirming the sequence, two cuttings were laid out in the habitation-area. Excavation revealed a l.55-m. deep deposit of seven layers covering three sub-phases. Of structural remains, mention may be made of a mud house of which two rooms were uncovered. The other finds included a number of microliths, made mostly on chalcedony and agate, and represented by such types as simple and parallel-sided blades, backed blades, lunates, points, etc. Flakes showing crested guiding ridge were available

from each layer. Besides, beads of stone and terracotta, sling-balls and pestles were also obtained. No iron object was found.

Some of the pottery-types compared favourably with those from chalcolithic sites of central and western India, Rajasthan and the southern Deccan. Taking into account the general characteristic features of the site, the beginning of the chalcolithic-megalithic culture can be placed in the early years of the second half of the second millennium B. c. with the possibility of a still earlier date.

78. EXCAVATION AT KAMAULI, DISTRICT VARANASI.—In continuation of the current work at Rajghat (below), the left bank of the Ganga was explored downstream. Across the Varuna, 3 km. due east of Rajghat, an ancient site was located near the village Kamauli. An exploratory trench dug near the bank of the Ganga revealed a twofold sequence of cultures.

Period I was represented by a few sherds of red ware, ochreous in appearance and with a tendency to rub-off, some of the sherds being decorated with incised designs. Associated with this was a parallel-sided chert blade. The assemblage may possibly represent the earliest protohistoric culture in this region.

Period II was marked by late medieval structures, pottery and finds. The strati-graphic gap between Periods I and II was represented by a 75-cm. thick layer of barren blackish clay.

79. EXCAVATION AT RAJGHAT, DISTRICT VARANASI.—In continuation of the previous year's work (1962-63, p. 41), the Banaras Hindu University, under Professor A. K. Narain, assisted by Shri T. N. Roy and Shri P. Singh, resumed excavation at Rajghat. With a view to cross-checking the culture-sequence indicated by the earlier excavations, a cutting, measuring 24 X 12 m., was dug vertically to the natural soil which was reached at an average depth of 13 m. from the surface.

In this cutting the upper 5 m. were found to be badly disturbed by huge pits, resulting out of the robbing of burnt-brick structures of Periods V and VI. Remains of a few structures and floors belonging to these Periods were, however, exposed. The lower 8-m. deposit was well-stratified and revealed a continuous sequence from Periods I to IV.

No structures were met with in the deposits of Sub-periods I A and I B. Three terracotta ring-wells and a domestic well along with a brick pavement were exposed in the strata belonging respectively to Sub-period IC and Period II.

In another small trench, laid in the same alignment about 10 m. east of the previous cutting RGT-4, the continuation of the outer slope of the clay-rampart (1960-61, p. 37) was encountered. Several alternate bands of silt and sand, deposited over the outer toe of the rampart, indicated the occurrence of floods. Immediately below the outer slope of the rampart was found a timber reinforcement to prevent scouring by floods, etc. Its complete plan and precise nature still remain to be ascertained. From a small pit underlying the rampart were obtained some human and animal bones, one of which was found to be in a process of fossilization. The other contents of the pit included a few sherds of the black-slipped and ill-fired red wares.

The whole bulk of pottery from the well-stratified deposit belonging to Sub-periods I A, IB and IC was carefully studied and a sherd-count taken. Six wares were represented in this deposit, the most dominant being the grey, the black-slipped and the Northern Black Polished Ware. In the diminishing order of frequency were the coarse-red, the fine-red and the black-and-red wares.

In Sub-period I A, all the wares excepting the N.B.P. Ware were in use. The black-slipped ware seems to be the earliest industry. The black-and-red ware was more abundant in the lower layers but gradually diminished in the subsequent strata. Some sherds also bore painted designs in white on the inner surface (pl. XXXIX A). A red-ware sherd showing painted design in white, executed by the multiple-brush technique, deserves special attention.

Sub-period I B was marked by the advent of the N.B.P. Ware including the painted variety. A red-ware sherd bore a dotted design in lustrous violet pigment. It seems that the pigment used for surface-dressing of the N.B.P. Ware was also used for decoration on other types of wares.

Sub-period I C represented the decline and gradual disappearance of the N.B.P. Ware and emergence of new shapes in red ware.

Among the stray finds, a sherd of the Rouletted Ware (pl. XL A), obtained from layer 4, deserves special mention. Other finds recovered from the various Periods included : four gold coins of the Gupta kings, Chandragupta, Kumaragupta I and Skandagupta, and other gold objects contained in a pot (pl. XL B); beads of terracotta, glass and semiprecious stones; pendants of shell, terracotta and paste with zoomorphic representations in the form of tortoise and fish; moulds for making human figurines and beads (pl. XXXIX B): human and animal terracotta figurines, both hand-made and moulded; seals and sealings of terracotta; copper and iron objects; terracotta balls; discs; flesh-rubbers; potter's stamps; and stone sculptures.

WEST BENGAL

80. EXPLORATION IN DISTRICTS BANKURA, BIRBHUM, BURDWAN, MIDNAPUR, PURULIA AND 24-PARGANAS.—The Department of Archaeology, Government of West Bengal, in the course of exploration located sites yielding; (i) Early Stone Age tools comprising handaxes at Barkola in District Bankura, Jibdharpur in District Birbhum and Bonkati in District Burdwan; (ii) Middle Stone Age tools at Jibdharpur in District Birbhum, Kurura and Bonkati in District Burdwan, Amagora, Barabhum, Jargo in District Purulia and Deulpota in District 24-Parganas; and (iii) microliths at Barkola, Basantapur and Kaliapathar in District Bankura, Jibdharpur, Kirnahar, Mandira and Sekadda in District Birbhum, Bonkati, Bistupur, Bhutsahar in District Burdwan, Gopagiri in District Midnapur, Amagora, Barabhum, Biramdih, Jargo, Matha Forest, Salboni and Sargo in District Purulia and Deulpota in District 24-Parganas. Besides, sherds of black-and-red ware, including the channel-spouted bowl, as also those of lustrous red ware painted in black and perforated pottery were recovered from Beluti, Kirnahar and Mandira in District Birbhum and Dhan-Tikrar-Dhibi near Gushkara in District Burdwan. From Deulpota, sherds of the Rouletted Ware were also recovered.

81. EXCAVATION AT MAHISDAL, DISTRICT BIRBHUM.—With a view to ascertaining the cultural components of the chalcolithic culture, recently discovered in West Bengal, a small-scale excavation was undertaken by Shri R. P. Das of the Eastern Circle of the Survey at Mahisdal situated on the north bank of the Kopai.

The extensive site (230 X 135 m.), rising some 5 m. above the surrounding fields, had a cultural deposit of only 2 m. at its maximum. Excavation revealed two cultural periods without any break, the later characterized by the use of iron.

Three structural phases were identified, two of them belonging to Period I. The floors of Period I were of beaten earth with a soling of rammed terracotta nodules. The presence of reed-impressed clay-daubs, burnt husk-impressed clay plasters and large quantities of ash indicated that the houses were simple. Plastered reed structures were frequent victims of fire.

The ceramics of Period I included: black-and-red ware, plain or painted in white as well as in black (pl. XLI A); black-painted red ware, of which there were only a few sherds; red ware bearing incised fillets; plain red ware; and black ware, sometimes with incised and pin-hole decorations. The lipped or channel-spouted bowl, carinated bowl with splayed-out or flaring rim and convex-sided bowl with sagger-base were usually common to all the wares. Painted designs included oblique strokes, sigmas and interconnected loops. Other associated finds comprised: microliths, consisting of scrapers, lunates and short blades; a flat copper celt with a convex cutting-edge (pl. XLI B); terracottas, including a small realistic phallus; tetrahedral objects, probably weights (pl. XLI C); bone objects (pl. XLII A), including pins; fragment of a decorated comb; and bangles and a number of beads of semiprecious stones and steatite. An interesting discovery was a large quantity of charred rice (pl. XLII B), found scattered all over the second floor-level of this Period.

In Period II, the ceramic tradition of the earlier Period continued, but the fabric became coarser. A new feature was the occurrence of buff and grey wares. Besides, a single sherd of a coarse grey fabric with bold smudgy strokes was also found. Iron objects such as arrow-heads, spearheads, chisels and nails as well as large quantities of iron ore and slag were found, testifying to the acquisition of the knowledge of iron metallurgy in this Period. Of special interest was a small clay sealing with two symbols. Microliths continued in use. Among the terracotta figurines, mention may be made of a broken part of an elephant in motion.

82. EXCAVATION AT NANUR, DISTRICT BIRBHUM.—With a view to ascertaining the relationship between the protohistoric and historical periods, a small-scale excavation was undertaken at Nanur by Shri R. P. Das of the Eastern Circle of the Survey.

In view of the restrictions imposed by the filled-up trenches of the 1946-excavation of the site by the University of Calcutta and protected shrines in the vicinity, the excavation had to be confined to an extremely limited area on the south-western edge of the mound, popularly known as Chandidas-Bhita.

Excavation revealed that the site had been in occupation from protohistoric through historical, including medieval, to modern times. Huge robbers' pits, reaching down to the natural yellowish clay and *kankar* levels, and similar activities had disturbed the occupational layers. The pottery collected from the layers immediately overlying the natural soil included red ware, black-painted red ware, white-painted and plain black-and-red wares and grey ware, the shapes represented being similar to those obtained from Mahisdal. No other material remains were found in this level.

83. EXCAVATION AT GOSWAMIKHANDA, DISTRICT BURDWAN.—The Department of Archaeology, Government of West Bengal, under Shri P. C. Das Gupta, assisted by Shri D. K. Chakravarty and Shri S. C. Mukherjee, undertook an excavation at Goswami khanda, locally known as Baraster-Danga.

Excavation laid bare a massive structure of laterite blocks (pl. XLIII), showing different phases of repairs. Initially, the platform, measuring 8-40 X 6.25 m., was built on a hard bed of cemented laterite nodules. This lowest stratum yielded a piece of fossil-wood scraper. Immediately above the layer of yellowish sandy silt and obviously con-temqorary with the platform, an extensive floor of beaten pellety laterite with signs of

large post-holes was uncovered. Thereafter, a smaller platform was added in the east and a group of four square pillars with slightly-tapering bases were found lying between the two platforms. To this period of second structural phase belonged conical cups and moulded bricks with opposite stepped merlons. In the last structural phase another floor of dark-grey laterite nodules was made above the earlier floor and the uppermost construction showed here and there iron dowels beneath the debris of laterite rubbles mixed up with fragments of Brahmanical images assignable to about the tenth century A.D. Among the pottery from this last phase may be mentioned terracotta conical cups, vases with outcurved and undercut rims and grooves at the neck, and lids with inner grooves.

84. EXCAVATION AT PANDU-RAJAR-DHIBI, DISTRICT BURDWAN.—In continuation of last year's work (1962-63, p. 43), the Department of Archaeology, Government of West Bengal, under Shri P. C. Das Gupta, assisted by Shri D. K. Chakravarty and Shri S. C. Mukherjee, resumed excavation at Pandu-rajar-dhibi. Eight fresh cuttings, each measuring 6 X 4 m., were laid on the northern slope of the eastern part of the main mound. Besides, another small trench, measuring 4 X 3 m., was laid in the central part of the mound. This year's excavation completely confirmed the fourfold sequence established last year.

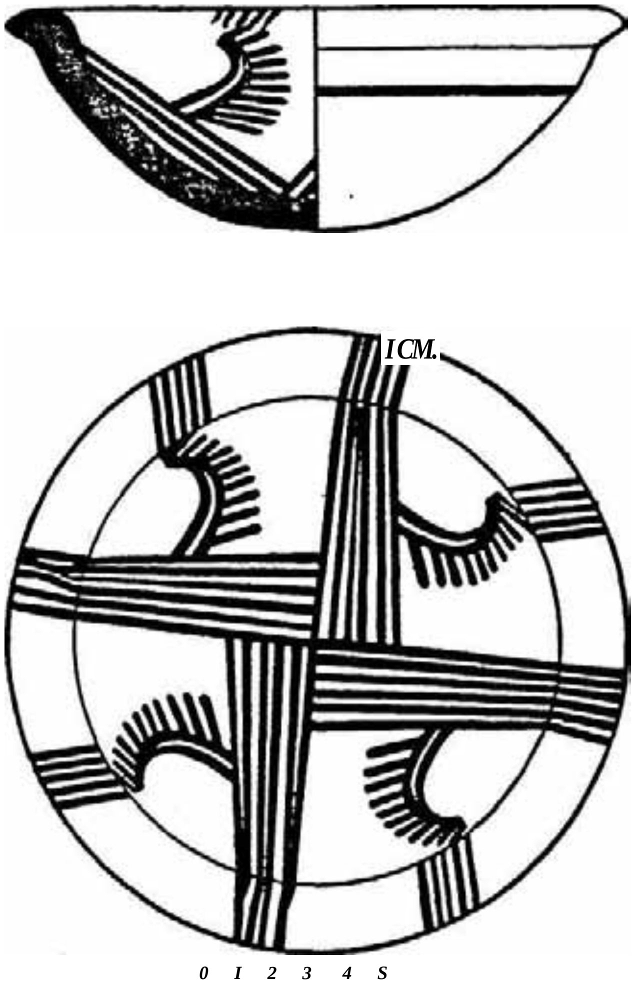


FIG. 15. *Pandu-rajar-dhibi: black-painted lustrous red bowl, Period III*

The ceramics of Period I included a thick hand-made grey ware bearing impressions of paddy-husk, wheel-turned thin ware of plain and sandy fabric, often rusticated, and a kind of pale-red ware. No sign of urban prosperity was observed. The digging uniformly revealed the occurrence of some phenomenon, possibly a flood from the Ajay, during and after the occupation of this Period. Excavations also revealed that, in all probability, there was some break between Periods I and II.

Period II bears evidence of the greatest prosperity of the chalcolithic culture at the site. During this Period emerged all the characteristic wares like the painted or plain black-and-red ware, lustrous red ware, bearing painted designs in black pigment (fig. 15), black-burnished pottery and chocolate or buffish ware painted in creamish-white. Besides", microlithic flakes and cores (pl. XLIV A, 2, 3 and 7-9), copper ornaments, bone-tools (pl. XLIV B, 2-4) and beads were also obtained.

Besides, other finds like a terracotta seal with a star motif, a stone disc carved with a stylized creeper on one side and a device probably representing a shield with a quiver of arrows on the other side, potsherds bearing graffiti and a number of copper ornaments were also found. The painted designs on the black-and-red ware included rows of chevrons, dots, hyphens, etc.; those on the lustrous red ware consisted of horizontal bands, solid triangles, chevrons, criss-crosses, wavy lines, sometimes enclosed within parallel lines, a star or a formalized starfish, etc.

Period HI witnessed a new element in the introduction of iron. Besides, the wares of the preceding Period including the lustrous red ware, copper ornaments and microliths (pl. XLIV A, 4, 10 and 11) also continued. Of special interest among the finds were several clay seals with double-axe motif and two exotic terracotta human figurines showing exaggerated chin and pointed helmet (pl. XLV).

Period IV, which followed after a break, belonged to the historical period. The ceramics were represented by plain storage-vases of thick fabric, saucepans with handles, lids with central knob and conical bowls. Besides, a small polished stone celt (pl. XLIV B, 5), bone tools (pl. XLIV B, 1), microliths (pl. XLIV A, 1, 5, 6 and 12), beads including a tiger's claw and copper eye pencil were also found.

85. EXPLORATION IN DISTRICT MIDNAPORE.—Shri A. K. Ghosh of the Prehistory Section, Department of Anthropology, University of Calcutta, in the course of his exploration in the District found Early Stone Age tools, mainly choppers, handaxes and scrapers from a deposit of secondary laterite at Gopalpur. The implements are Abbevilleo-Acheulian in type. This tool-bearing laterite, detrital in character, was found on the slope. In some places the upper surface of the laterite was found to be weathered. On the basis of technique and typology, the implements could be divided into two groups: (i) large tools with crude workmanship on choppers and bifaces; and (ii) comparatively small tools with finer workmanship. In the latter group, besides bifaces scrapers and points were also present.

In the same area, the Taraphoni valley yielded a large number of microliths, comprising blades, scrapers of different forms and points together with micro-cores. They were found to occur below the recent deposits.

86. EXCAVATION AT RAJBADIDANGA, DISTRICT MURSHIDABAD.—In continuation of last year's work (1962-63, p. 46), the Department of Archaeology, University of Calcutta under Shri S. R, Das, resumed excavation at Rajbadidanga.

The already-excavated area was extended towards the north, south and east. Besides horizontal digging, a cutting, measuring approximately 80 X 11 m., was made vertically across the mound with a view to determining the existence of the enclosure-wall, if any, and to establishing the culture-sequence of the site.

Excavation revealed six structural phases (pl. XLVI B) as identified last year. Of Phase I, the structural remains were available only in two trenches, while those of Phase II were spread over the entire excavated area. Associated with a wall of Phase II was found a human skull (pl. XLVI A). Structures of Phase III were exposed in a few trenches, the more outstanding of which was a granary. To Phase IV belonged square structures and platforms. Phase V was represented by an enclosure-wall with four square structures. To Phase VI, being the latest structural activity on the site, belonged a circular stupa-basement and a platform with post-holes.

In the vertical cutting an outstanding discovery was a long and wide wall standing to an extant height of twenty-one brick courses, built right above the natural soil. From the position and nature of the wall, it may be reasonable to infer that the structure enclosed the inhabited area for protection against inundation. The other structural remains could be ascribed to Phases II and III.

For working out the chronology of the site the evidence of seals and scalings, stucco heads as also Carbon-14 determinations may be taken into consideration. A large number of seals and sealings was obtained from the different structural phases, more particularly Phase III. On palaeographical grounds, they are assignable to a period between the sixth and the tenth century A.D., with a central date around the seventh-eighth century. A Carbon-14 determination of material from Phase III at 1200±80 B.P. confirms this postulate. Of the stucco heads one coming from a stratum anterior to Phase III is datable to the earlier part of the fourth century A.D. Thus, on the strength of these evidences, it may reasonably be held that the earlier two phases belonged to the period from *circa* second to the fifth century A.D. and Phase III to the sixth-seventh century. Other subsequent phases could be dated to a period extending up to the twelfth-thirteenth century A.D.

Among the finds special mention may be made of seals and sealings containing the usual *dharma-chakra* flanked by two deer and a two-line legend or the usual Buddhist formula or personal inscriptions (pl. XLVII A and B). Some of the sealings refer to the illustrious *Raktamrittika-vihara* and its *acharya-bhikshu.* Terracotta moulded plaques (pl. XLVII D), beautiful stucco heads (pl. XLVII E) belonging to Gupta and post-Gupta periods, bronze figure of Buddha, copper and iron objects and moulds (pl. XLVII C), besides decorated pottery, constituted the material remains recovered from the various phases.

87. EXCAVATION AT CHANDRAKETUGARH, DISTRICT 24-PARGANAS.—The Asutosh Museum of Indian Art, University of Calcutta, continued (1962-63, p. 46) excavation at Chandraketugarh. The work was undertaken both at Khana-Mihirer-Dhipi and at Itkhola near the rampart-wall.

At Khana-Mihirer-Dhipi, excavation confirmed the six successive Periods of occupation.

Period I, assignable to the fourth-third century B.C., was represented by the use of the Northern Black Polished Ware as also plain grey and dark-grey ware of fine fabric and punch-marked coins.

Period II was marked by the usual ceramics of the early Christian era, terracottas, a large number of cast copper coins, stone beads, etc. The occurrence of a small square wooden enclosure, made of tightly-joined horizontal planks, reinforced by beams at the bottom and supported on wooden logs, was interesting. On the horizontal planks a thick layer of paddy-husks was found. It appears from the construction and associated material that the structure was meant for storing paddy for domestic use.

Period III witnessed the use of the Rouletted Ware, spouted cups, already known from the same horizon of Itkhola, grey bowls and dishes, both of plain and stamped variety, red-slipped stamped vases and grey narrow-necked cylindrical vases. Of special interest was a unique terracotta plaque representing a richly-adorned dancing male figure (pl. XLIX A).

The western and southern sides of the main temple-structure of the Gupta period of Period IV were fully exposed down to its foundation. This year's work further revealed that the temple faced true north. It had a large square sanctum cella with projections on three sides and a covered ambulatory passage. The bigger square was preceded by a rectangular covered vestibule with a rectangular open porch in front, complete with a flight of steps. Around the larger square, the vestibule and the porch, was a rectangular structure with projections on three sides, corresponding to those of the inner square. Rising from the same level as that of the main temple, its facade and the two sides up to the vestibule were decorated with shallow niches, possibly plastered with stucco, and embellished with rounded offsets and string course of dentils made of moulded bricks. This season's work led to the unearthing of massive brick buttresses (pl. XLVIII), between the projections of this structure and those of the main temple, recalling similar provisions at the Vishnu temple at Eran. There were two open ambulatory passages. On the western corner of the mound, a miniature replica of the main temple as also the basement of a votive *stupa* flanking the stairway were laid bare. Evidence of renovation, repairs and extension of the main temple in the subsequent period was duly recorded. From the working-levels of the main temple itself, various pottery-types, both for ritual and domestic use, terracottas, beads, conch bangles and decorative stucco motifs were recovered. Besides terracottas of the typically Gupta period, a unique piece in the round with applied eye-balls, pinched-up nose and ears and outspread ornamented short hands shown up to the waist deserves special attention.

Period V could not add more data than what had been already recorded in previous years. An outstanding find from this Period was a hollow-bottomed ritualistic vase with a flared-up base and a long narrow neck and decorated with plant motifs (pl. XLIX B).

Excavation at Itkhola was undertaken essentially to correlate the sequence of this area with that of Khana-Mihirer-Dhipi. Four successive Periods commencing with the N.B.P. Ware levels to *circa* sixth century A.D. corresponding to those at Khana-Mihirer-Dhipi were revealed. The level supposed to be earlier than the N.B.P. Ware, as reported earlier, could not be reached due to rains. Along with the N.B.P. Ware, punch-marked coins were also obtained in Period I.

In Period II, besides the convex-sided bowls and dishes, plain and decorated storage-jars and vats, terracotta plaques and several corroded cast copper coins were found.

Period III, assignable to the first-third century A.D., yielded dishes and bowls of grey and dark-grey wares, internally stamped at the bases, the Rouletted Ware and black-slipped spouted cups. No evidence of the existence of N.B.P. Ware or its imitation, as reported earlier, was forthcoming this season. A headless terracotta *naga* figure of the Sonpur type, a bird rattle and a ram toy-cart obtained from this Period are noteworthy.

Period IV, datable to between the fourth and sixth century A.D., yielded : cups and bowls of red and buff colour with wide mouth and small flat base; fragments of cooking-pans ; globular vessels narrow-necked jars and vessels with incised or thumb impressions round the neck; terracottas; ivory and conch bangles; an iron axe; and stone and terracotta beads. A mutilated sealing, with Gupta characters *reading ye dharma hetu* of the usual Buddhist creed, was also recovered from this Period.

The two post-Gupta periods known at Khana-Mihirer-Dhipi could not be identified at Itkhola.

II. EPIGRAPHY

SANSKRITIC AND DRAVIDIC INSCRIPTIONS[1]

ANDHRA PRADESH

1. PILLAR-INSCRIPTIONS IN TELUGU, CHENNAKESAVA TEMPLE, VELPURU, DISTRICT GUNTUR.—One of the inscriptions records the construction of the *mandapa* in front of the temple by three individuals, while two others mention the names of some Vaisya devo tees, who probably donated the pillars, as belonging to the lkshvakukula-gotra and Munikula-gotra. Another record mentions god Ramanathadeva and records gifts of some jewels, unguents, etc., to the deity by the *silpa-acharyas* who assembled for the purpose in Policherla Subbacharya's house. The records are in late characters.

2. EASTERN CHALUKYA CHARTER, MADDUR, DISTRICT KHAMMAM.—This undated charter of king Vijayaditya II, in Sanskrit language and southern script, records the royal grant of the village Varppongu in Pishtapura-vw/mja to the Brahmana Chandaya-sarman, son of Pota-sarman and grandson of Reva-sarman of Kasyapa-gotra, on the occasion of a lunar eclipse. The donee is said to be a resident of Indupurevu.

3. **VIJAYANAGARA COPPER-PLATE GRANT, DADADADI-KOTAKONDA, DISTRICT KURNOOL.**—Dated wrongly in Saka 1311 (probably for Saka 141 1-A.D. 1489), this charter of Saluva Narasimha in Telugu language and characters states that the regions around Yadavadurga and Dronachala having become deserted, the king proclaimed grant of *kenachi* rights to those who came forward to settle in them and that in response to the proclamation people from several places such as Guddali, Billakalu, Banala, Manukoti, etc., approached the king and secured the rights for settlements in Daladuli-Kotakonda which was one of the deserted regions thrown open for the purpose.

4. **VIJAYANAGARA INSCRIPTIONS, TALUK PATTIKONDA, DISTRICT KURNOOL.—** Dated in Saka 1272 (A.D. 1350) in the reign of king Harihara I, an inscription, discovered in the village Ratana, records the construction of a tank called Rachasamudram by an officer of the king. Another inscription in the Chintalarayasvamin temple at Kommu-nutula, dated Saka 1407 (A.D. 1485) in the reign of Saluva Narasimha, registers the grant of the village Komatinutula in Ghandikota-sima by *mahamandalesvara* Bukkaya-deva-maharaja, son of Araviti-Tata-Pinnamaraju of Atreya-gotra, for worship and offerings to god Tiruvengalanatha of the village. Two other later members of the Araviti family, Koneti Timmaraju, son of *mahamandalesvara* Chika Komdraju, and Timmaya-deva-maharaju, son of *mahamandalesvara* Ramaraju-Pinakomdraju, also figure as donors in two inscriptions of Sadasivadeva, one from Khairappala dated Saka 1466 (A.D. 1545) and the other from Pulikonda dated Saka 1471 (A.D. 1549) both situated in Pattikonda Taluk. In the former, the chief Koneti Timmaraja, who figures as the governor of

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1 Information from : 12, the Director of Archaeology, Andhra Pradesh State; 21-30, the Director of Archaeology, Kerala State; 33, the Superintendent of the Survey, Northern Circle. 34-35, 66 and 67, Professor K. D. Bajpai, University of Saugor; 37, the Superintendent of the Survey,, Central Circle; 54 and 55, the Director of Archaeology, Mysore State; 59-63, the Assistant Director of Museums, Orissa State; and the rest, the Government Epigraphist for India of the Survey.

Adavanidurga, restored the taxes *talavarike* and *sthalasumka* amounting to eighteen *madas* to the *vidvanmahajanas* of the *sarvamanya* village Khairapuli *alias* Devarayapura. The Pulikonda epigraph registers the grant of Pulikonda *alias* Konasamudram to Krishna-charyulu, son of Vinjamuru Tirumala Tatacharyulu by Timmayadeva-maharaja. Two inscriptions belong to the reign of Achyutadevaraya. One of them, from Dadadadi-Kotakonda, is on a huge rock near the Ranganatha temple and records a gift of land to the god in Saka 1454 (A.D. 1532); the other, from Chinavoliti and dated Saka 1457 (A.D. 1535), records a gift of land to an individual by *mahamandalesvara* Chennarajadeva-maharaja. The last record furnishes details of a date in the solar reckoning which is rather unusual in Vijayanagara records in the Andhra country.

5. MISCELLANEOUS INSCRIPTIONS, PATTIKONDA, DISTRICT KURNOOL.—Four granite pillars built into the gateway at the entrance to Pattikonda town bear short inscriptions in Kannada characters attributable to about the ninth century and record names of individuals such as Kondalayya, son of Koyya-gavunda, and Pollama-gavunda, son of Duppa-gavunda of the Mududara family, as the donors of the pillars. These pillars, like those of the Munro's tank in the suburbs of the village, must have been brought from a dilapidated temple close to the village and utilized in raising these structures in memory of Sir Thomas Munro. A brass plaque fixed to the wall in the Taluk office at Pattikonda under the bust of Sir, Thomas Munro contains inscriptions in English and Telugu commemorating his death by an attack of cholera at Pattikonda on the 6th July, 1827.

6. INSCRIPTIONS, TALUK ALAMPUR, DISTRICT MAHBUBNAGAR.— Of a dozen inscriptions copied from various villages in the Taluk, two, in Kannada, belong to the reign of the Chalukya king Somesvara I. One of them from Langhanavay, dated Saka 981 (A.D. 1059), mentions a Telugu-Chola subordinate of the king whose name is lost. Another inscription from Koildinne, which bears a date in Saka 987 (A.D. 1065), mentions *mahamandalesvara* Bijjarasa, apparently of the Telugu-Choda family, as the donor of some land.

7. CHALUKYA INSCRIPTION, RAMAPURAM, DISTRICT MAHBUBNAGAR.—Engraved in Telugu-Kannada characters of about the middle of the seventh century, the inscription in telugu, belonging to the reign of Vikramaditya (I), records gifts of land to Sankarasvamin, Ayicha-sarman, Reva-sarman and others belonging to the various *gotras* by Baladitya-maharaja who was apparently a feudatory of the king.

8. CHOLA RECORDS IN TAMIL, CHENNUR, DISTRICT NELLORE.—Dated in the twenty-sixth year of the reign of Rajaraja III (A.D. 1241-42), an inscription in the Chennakesava temple records an undertaking given by the priests *(nambimar)* to burn a lamp endowed by Nallappichchetti, son of Panditti Revvinayakkan in the Chittirameli-Vinnagar *alias* Kesavapperumal-koyil in Cheruvanur. Another record in the same temple, bearing the date of Saka 1164 (A.D. 1242) corresponding to the same king's twenty-seventh regnal year, also records similar transaction as in the above, while a third inscription on a pillar in the same temple and dated Saka 1176 (A.D. 1254) records a grant of land for food-offerings to god Chenna-Gopala by Bhageraya Singaradevan for the merit of Manuma-Siddharasa *alias* Madhurantakap-Pottappichcholan.

9. TELUGU-CHODA INSCRIPTION, KANUPURU (VIRANNA), DISTRICT NELLORE.—Dated in Saka 1222 (A.D. 1300) corresponding to the ninth regnal year of *tribhuvanachakravartin* Rajagandagopala, the epigraph in Tamil records a grant of a village (name lost) by Madhurantakap-Pottappichcholan Rajagandagopalan for worship of the deity Pillaiyudaiya

Narayanapperumal, which was being worshipped by Tirukkachchi-Nambi as his personal deity.

10. CHOLA INSCRIPTION, KRISHNAPATNAM, DISTRICT NELLORE.—Dated in Saka 1178 (A.D. 1256) in the reign of Virarajendradeva, the inscription, in Tamil on a slab built into the wall to the left of the entrance into the Siddhesvara temple, records an endowment of money to provide for the worship of Manumasiddhisvaramudaiya-nayanar by the *uravar* and the *Padinenbhumi-samasta-paradesigal* of Kollitturai *alias* Gandagopalapattinam who met for the purpose at the Desinayakan-tirukkavanam in the temple of Chandadittiraippillaiyar.

11. TELUGU-CHODA INSCRIPTION, KRISHNAPATNAM, DISTRICT NELLORE.—Dated in Saka 1201 (A.D. 1279) in the second regnal year of the Telugu-Choda king *tribhuvanachakravartigal* Irumadi Tirukkalattidevar, the record in Tamil states that the *Ainjuvannavanikar* of Malaimandalam, *Nanadesip-Padinenbhumi-samasta-paradesigal*, the *nadu* and the *nagaram*, having met at the Ainnuruvan-tirukkavanam Kollitturai *alias* Gandagopalapattinam, decreed the assignment of the income from levy at the rate of one-fourth *panam* per cent on commodities exported and imported through that port to god Manumasiddhisvaramudaiya-nayanar.

12. MISCELLANEOUS INSCRIPTIONS.—Of the sixteen inscriptions copied from Waran gal, Achchampet, Mahbubnagar and Guntur Taluks, one from Punnavolu near Warangal, in Kannada, refers itself to Iriva Bedanga Satyasraya of the Kalyani Chalukyas. It is dated Saka 9[2]9. The other inscriptions from Warangal Taluk relate to the Kakatiyas. Four from Mandapadu, Guntur Taluk, belong to the time of Velanti Gonka and his son Rajendra Choda. Their dates range between Saka 1051 and 1060.

BIHAR

13. INSCRIPTION, MUSEUM, PATNA—An inscription, in Sanskrit and in late Brahmi of the fourth-fifth century A.D., engraved on a sandstone coping-stone of a railing dis covered at Colgong, records that an unnamed Buddhist monk who belonged to the royal family of Lanka (Ceylon) performed religious worship at the *Ratnatraya*.

DELHI

14. MAITRAKA COPPER-PLATE CHARTER, DELHI.—This Sanskrit charter in southern characters, reported to be in the possession of the proprietor of a New Delhi firm, was issued by *maharaja* Dharasena II from Valabhi and is dated in Gupta-Valabhi-*samvat* 252 (A.D. 572). It records the royal grant of one hundred and eighty-six *padavarttas* of land in three villages named Bhandavataka-grama and Chachcharaka-grama in Madasarasthali and Bharivikanda-padraka to the Brahmana Yuvanaga belonging to Kausika-gotra.

15. IMAGE INSCRIPTION, NATIONAL MUSEUM, NEW DELHI.—Engraved on a pedestal of a Svachchhanda-Bhairavi image, this inscription in Sarada characters and in Sanskrit language, dated in Sastra-samvat 53 (A.D. 1076), refers to the reign of Rudrasena and seems to record some donation.

GOA

. 16. INSCRIPTION OF KADAMBA JAYAKESIN, VELHA GOA.—This damaged and incomplete Kannada inscription, dated Saka 97(6) (A.D. 1054), refers to the rule of a chief-

tain (name illegible) who bears a string of titles and is described as meditating on the feet of Bi(Vi)ravarammadeva and as the exemplary soldier of Jayakesideva.

GUJARAT

17. INSCRIPTIONS, KUTCH MUSEUM, BHUJ, DISTRICT KUTCH.—Out of the seven inscriptions copied, a Sanskrit inscription, in northern characters of about the eighth century engraved on the pedestal of a bronze image of standing Buddha, records the gift of the image *(kirtti)* by *bhikshuni* Kasama for the merit of her parents. Another inscription in corrupt Sanskrit, engraved on the pedestal of a marble *tirthankara,* discovered from a step-well at Bhuj itself, is dated Vikrama-.samvat 1300 (A.D. 1244) and refers to the installation of the image of 5r/-Muni-Suvrata by Yasaschandra Bhapada. The third inscription, also in corrupt Sanskrit, engraved on the pedestal of another marble *tirthan-kara* image, discovered at Dativada in District Banaskantha, which is dated in Vikrama-*samvat* 1304 (A.D. 1246), records that the image of Rishabhadeva was installed by *bhatta-raka* Padmachandra-suri.

HIMACHAL PRADESH

18., STONE INSCRIPTION, KOH, DISTRICT CHAMBA.—The Bhuri Singh Museum of Chamba discovered a stone inscription at Koh, Gadial Pargana. It is small and partly damaged. On palaeographical grounds it can be assigned to about the twelfth century.

KERALA

19. INSCRIPTION, DHARMADAM, DISTRICT CANNANORE.—This fragmentary Sanskrit inscription, in early Nagari characters of about the tenth century, contains an invocation to Samantaka and a formula of incantations. The slab is now used as a step-stone in the Pettiyilullor-Makham in Villiyavarambu.

20.,. INSCRIPTION, PULLAR, DISTRICT CANNANORE.—This small Tamil inscription, in Vatteluttu characters of about the twelfth century, is dated in the fifty-fifth year of the reign of Bhasakaran Iravivarman *alias* Adichcha(Aditya)devar when Jupiter was in Karkataka and records the gift of money for bathing the deity. It is engraved on a slab set up inside the Kodavalam-Vishnu temple.

21. INSCRIPTION, EAST KALLADA, DISTRICT QUILON.—This incomplete inscription in the Vishnu temple, in Tamil and Vatteluttu characters, mentions one Vira Kodai Adi-chchavarman of Kilpperur.

22. INSCRIPTION, PUNALUR, DISTRICT QUILON.—Dated in 421 M.E. (A.D. 1246), this inscription in the Trikkodesvaram temple records the fact that a *balikkal* was set up by Chakrayudhan Martandan.

23. INSCRIPTION, ARCHAEOLOGICAL MUSEUM, TRICHUR.—The stone slab contain ing the inscription which records certain provisions made in the temple came from Keva-sseri.

24. INSCRIPTIONS, AHTHIKKAD, DISTRICT TRICHUR.—-These inscriptions are engraved on the basement of the *mandapa* in the Katyayani temple. These are in Malayalam written in Vatteluttu characters of the eighth century M.E. and record the construction-works done in the temple by a private individual.

25. INSCRIPTION, CHOVALLUR, DISTRICT TRICHUR.—This Tamil inscription in Vatteluttu characters is in the local Siva temple and records the setting up of a lamp in the temple by Marudodi and Kannanchitha.

26. INSCRIPTION, GURUVAYUR, DISTRICT TRICHUR.—This Sanskrit inscription in verse in Malayalam characters records the construction of a *gopura* in front of the temple.

27. MALAYALAM INSCRIPTION, MADUVARA, DISTRICT TRICHUR.—This Malayalam inscription records the institution of a sacred lamp in the temple.

28. TAMIL INSCRIPTION, MADUVARA, DISTRICT TRICHUR.—This Tamil inscription, written in Vatteluttu characters of the eleventh century, records a grant of land to the local temple and an agreement of its management.

29. COPPER-PLATE INSCRIPTION, STATE MUSEUM, TRIVANDRUM.—This copper plate inscription in Malayalam, dated 971 M.E., contains an order issued by king Martandavarma of Travancore.

30. INSCRIPTION, TRIVANDRUM CITY.—This Tamil inscription, dated 541 M.E., records the dedication of a stone tub as a charity by a lady.

MADHYA PRADESH

31. INSCRIPTION, DURGAPUR, DISTRICT DATIA.—Engraved on the pedestal of an image of a goddess and dated in Vikrama-jamm/1225 (A.D. 1169), this Sanskrit inscription in Nagari records the obeisance of the sons of a Brahmana named Dasaratha of Padakrishnatraya-*gotra*. The latter bears the title *nayaka.* The record mentions Bhagirathipura.

32. INSCRIPTION OF FIRUZ SHAH TUGHLUQ, PARASHARI, DISTRICT DATIA.—Written in Sanskrit and dated Vikrama-samvat 1421 and Saka 1286 (A.D. 1364), the record refers to the reign of *Suratrana* Peroja Sa (Firuz Shah Tughluq).

33. SATI-STONE INSCRIPTION. DISTRICT DATIA.—At Parashari, on the Datia-Unnao road, about 9 km. from Datia, a large inscribed monolithic *sati*-pillar was discovered. It is dated both in Vikrama and Saka eras, 1421 and 1286 respectively. Its exact purport is not clear. Obviously the pillar was installed as a memorial to some lady belonging to a royal house, for there is a mention of a *paramesvara maharajadhiraja sri-Suratrana-suta...,* who seems to be one of the Khangara rulers of Bundelkhand.

34. BRAHMI INSCRIPTION, SONERI NEAR SANCHI, DISTRICT RAISEN.—On a fragmentary stone a Brahmi inscription, reading *bhichhuno danam,* written in the Brahmi script of the first century B.C., was discovered.

35. INSCRIPTION, KUNDESHWAR, DISTRICT TIKAMGARH.—On a pedestal of a Jaina *tirthankara* image, a dedicatory inscription dated *samvat* 1196 (A.D. 1139) was discovered.

36. INSCRIPTION, UJJAIN, DISTRICT UJJAIN.—Of the eleven inscriptions copied from here, the earliest is a fragmentary Prakrit inscription in Brahmi of about the third century A.D. which reads.. *damasya putrasya,* evidently pertaining to the royal house of the Kshatrapas who were then ruling over the region. The inscription is in the possession of Shri V. S. Wakankar. Another fragmentary Sanskrit inscription in Nagari of about the twelfth century, now fitted on the interior top of the doorway leading into the northern *chhajja* of the third storey of the Mahakalesvara temple, contains a number of verses in praise of the god Mahakala.

37. INSCRIPTION, VIDISHA, DISTRICT VIDISHA.—A fragmentary stone inscription (pl. L A) in characters of the fifth century was discovered.

MADRAS

38. CHOLA INSCRIPTION, MANGADU, DISTRICT CHINGLEPUT.—Dated in the third year of the rule of Rajendrasoladevar, this Tamil inscription in characters of the eleventh century refers to the Vishnu temple, where it is engraved, as Kalikesari-Vishnugriha and records the gift of sheep for a lamp.

39. INSCRIPTIONS, AKHILANDAPURAM, DISTRICT COIMBATORE.—Three inscrip tions in Tamil characters of the thirteenth century are engraved on the tiers of the west and south walls of the Agastyesvara temple. One of them refers to the *mugavanai* (covering) made for the *ardha-mandapa* of the temple by the wife of a member of the com munity called Kavalar-Kurumpullar. The other two refer to the communities called Vellalan-Andaigal and Venkorrar.

40. VIJAYANAGARA INSCRIPTION, AKHILANDAPURAM, DISTRICT COIMBATORE.—This Tamil inscription, dated in Dundubhi (A.D. 1382-83), in the rule of Sayana-udaiyar, records a gift of money for food-offerings during nights to god Agattisvaram-udaiyar by the *ur* and *uraligal* of Kangeyam. This inscription affords the latest date for the prince.

41. BRAHMI INSCRIPTION IN TAMIL, DISTRICT MADURAI.—Fresh inscriptions were discovered in Mangulam, Muttuppatti, Vikkiramangalam and Alagarmalai. One of them from Alagarmalai, in characters of about the first century A.D., refers to Atan as having received *mattireyi pon* (gold).

42. KONGU-CHOLA INSCRIPTION, KIRANUR, DISTRICT MADURAI.—Engraved in Tamil characters of the twelfth-thirteenth century, the inscriptions belong to the time of the Kongu-Chola king Virarajendra and record the gifts of gold and land by some indivi duals to the deity Tiruvagisvaram-udaiyar.

43. INSCRIPTION, MUTTULINGAPURAM, DISTRICT MADURAI.—This Tamil inscrip tion, in Vatteluttu characters of the late tenth century, is engraved on a loose slab below an inscription of *Solantalaikonda* Virapandya. It does not cite any king's rule but begins with the mention of the regnal year 13+8, thus indicating the existence of a Pandya king, not known so far, after Virapandya. It seems to record some provision for food-offerings.

44. HERO-STONE INSCRIPTION, HALATTANAI, DISTRICT NILGIRIS.—This Tamil inscription, in characters of the twelfth century, records the death of Parumandi Sirukodai-pallikaran in an encounter with a tiger.

45. INSCRIPTIONS, VANIYAMBADI, DISTRICT NORTH ARCOT.—Engraved on the jamb-stones of the entrance leading to the *ardha-mandapa* of the Atithisvara temple, this Tamil inscription records the grant of land made tax-free for maintaining a lamp in the temple of god Virundinamperumanadigal at Vaniyambadi *alias* Narasimha-chaturvedimangalam in the eighth year of the rule of Parthivendra-varman who took the head of Virapandya. Another, engraved on the north wall of the second *prakara* of the same temple, records gift of cows for a lamp to Vidukadalagisvaram-udaiyar for whom Singan Aludaiyan Nulambadarayan, the donor, is stated to have erected a shrine up to the *stupi* in Saka 1143 (A.D, 1221-22).

46. INSCRIPTION, VETTAVALAM, DISTRICT NORTH ARCOT.—Engraved in characters of the fourteenth century on the rock in the Ramanathasvami temple, this Tamil inscrip tion records the grant of the village along with the income from taxes including *mamadi vallaladevankanikkai.*

47. TAMIL INSCRIPTIONS OF BOMMUNAYAKA, DISTRICT NORTH ARCOT.—One of the inscriptions from Mamandur and the other from Punalappadi, dated respectively in Saka 1514 and 1515 (both corresponding to A.D. 1593), register the gift of two villages, by purchase, to the deity Kailasanatha of Arani by the Vellor chief Bormmunayaka who was the son of Nagamanayaka and a feudatory of king Venkatapati of Vijayanagara.

48. INSCRIPTION, NAGAPATTINAM, DISTRICT THANJAVUR.—This inscription in Tamil characters of the fifteenth century is engraved on a slab built into the ceiling of the entrance of the Naganathasvami temple. It records the grant of *tirumadaivilagam* for repairs and other services in the Rajarajaperumpalli *alias* Sri-mahesvara-pperumpalli.

49. BRAHMI INSCRIPTION IN TAMIL, PUGALUR, DISTRICT TIRUCHCHIRAPPALLI.—Engraved on the brows of the two caves to the south of the hill, the two inscriptions, in characters of about the first century A.D., record the excavation of the *pali* and the cutting of the rock respectively. The latter is stated to have been done by Kadungon-(E) langon Kolan.

50. INSCRIPTION, VIRAPANDIYANPATTANAM, DISTRICT TIRUNELVELI.—Dated in Kollam 563 (A.D. 1387-88), this Tamil inscription on a stone in the Makhdum mosque records the conferment of the names of Udaiyamattanda-pperumpalli and Udaiyama-ttanda-kkadiyar on the Jumattuppalli and Kadiyar Abu-Vakkar respectively in Sonadukonda-anppattinam and also the grant of one-fourth percent of the value of the commodities that passed through the port to the mosque.

MAHARASHTRA

51. INSCRIPTION, HISSE-BORLA, DISTRICT AKOLA.—This Sanskrit record on a stone, lying in the nullah of the river Vatsagulma and dated [Saka] 380 (A.D. 458-59), belongs to the reign of Vakataka Devasena and records the construction of a lake called Sudarsana by the king's *ajnakara* Svamilladeva. See above, p.22.

52. INSCRIPTION, BHANDAK, DISTRICT CHANDA.—Dated Saka 1248 (A.D. 1326), the inscription in local dialect and Sanskrit, engraved on a dressed stone slab, now kept in the *mandapa* of the Bhadranaga temple, seems to record the renovation of a temple and the installation of an image of Narayana.

53. INSCRIPTION, MARKANDA, DISTRICT CHANDA.—Engraved on a rock-boulder in the compound of the Markandesvara temple, this two-line Sanskrit inscription, in northern characters of about the seventh century A.D., reads : (1) *anuragah priyapurnna[h]* and (2) *Bappanaga-sri[h]*.

MYSORE

54. LABEL-INSCRIPTIONS, KELAGI, DISTRICT GULBARGA.—On the outer walls of the Kalingi temple are some beautiful relief-sculptures in different poses. On the top of some of them are short inscriptions, of about the eleventh century, each in a stanza, describing the way in which the ladies depicted in the reliefs are singing in praise of Nilakantha.

55. HOYSALA INSCRIPTION, RAMAPATNA, DISTRICT MYSORE.—The inscription, belonging to the rule of the Hoysala king Vishnuvardhana and dated in Saka 1040 (A.D. 1118), refers to the construction of a Jaina *basti* at the place. Incidentally it mentions that the king was ruling Gangavadi-96000 from Talakad and Kolalapura (and not from Dorasamudra, his permanent capital), indicating that he was still consolidating the Ganga territories he had conquered from the Cholas in A.D. 1117.

56. COPPER-PLATE GRANT OF KEKAYA CHITRASENA, HONAVAR, DISTRICT NORTH KANARA.—Engraved in southern characters of about the sixth century A.D. and issued in the first regnal year of Chitrasena-mahakella of the Kekaya family, this Sanskrit charter records a grant, made by him, of the village Napitapalli to the *arya-samgha* (the Buddhist community), during the rule of Ravimaharaja. The charter was written by Ji(na?)-nandi-senapati, son of Simha-senapati.

57. INSCRIPTION OF CHALUKYA VIJAYADITYA, DISTRICT HALGERI, DISTRICT RAICHUR.—This incomplete and undated Kannada inscription in Telugu-Kannada characters of the eighth century refers to the *murujati* of Kopana (modern Koppal, the head quarters of the Taluk of the same name) and to the chief of Gutti, whose name is lost, as being responsible for some grant, the details of which are also lost.

58. COPPER-PLATE INSCRIPTIONS, UDIPI, DISTRICT SOUTH KANARA.—Eleven copper plate inscriptions in Kannada, most of them belonging to the seventeenth-eighteenth cen turies, were secured this year. Of these two grants, belonging resqectively to the rule of the Keladi chiefs Bhadrappa-nayaka and Virabhadra-nayaka and dated respectively in Saka 1524 (A.D. 1602-03) and Saka 1553 (A.D. 1631-32), are interesting in that they record gifts by these two chiefs, who are both described as adherents of Saivism and Advaita-siddhanta, to the temple of Krishna at Udipi, established by Madhvacharya, the founder of the Dvaita-siddhanta. Two other copper-plates, one of which is dated in Saka 1636 (A.D. 1714-15), records endowments of money in *dharavadagadyana* by Savundararaja-pandita, a minister *(pradhana)* at the Mysore Court, for conducting services to Krishna on the day of Madhva-navami every year.

Another copper-plate, dated in Saka 1740 (A.D. 1818), records that one hundred and four pieces of land, purchased at a cost of one thousand, three hundred and one *varahas* were endowed to the eight *mathas* at Udipi established by Madhvacharya. The number of pieces so endowed to each *matha* and the cost incurred for their purchase are also listed in the charter.

ORISSA

59. COPPER-PLATES, DISTRICT KORAPUT.—Two single Oriya copper-plates, one of Ramachandradeva and the other of Gopinathadeva of the old Nandapur kingdom, were received in the State Museum, Bhubaneswar, as presents from Dr. K. B. Tripathy, Head of Department of Oriya, Revenshaw College, Cuttack. The plates do not contain any date.

60. COPPER-PLATES, SAKHIGOPAL AREA, DISTRICT PURI.—A set of five copper plates, discovered in 1959 in the Sakhigopal area of Puri District, was acquired by the State Museum, Bhubaneswar. The charter was issued during the reign of the Ganga monarch Aniyankabhimadeva (A.D. 1211-1232). It does not contain any date except reference to a lunar eclipse on the occasion of which lands were granted at Sri-Purushottamakshetra to Brahmanas of different *gotras*.

61. COPPER-PLATES OF MAHASIVAGUPTA YAYATI I, STATE MUSEUM, BHUBANESWAR, DISTRICT PURI.—A set of three copper-plates of the time of Mahasivagupta Yayati I, son of Mahabhavagupta, was acquired. The grant was issued from Vinitapura in the fourth regnal year of the king on the fifth day of the bright fortnight of Karttika. It contains some new verses which state that the father of Yayati I founded the city of Vinitapura at the instance of his minister.

62. INSCRIBED BRONZE IMAGES, BHAUMA PERIOD, STATE MUSEUM, BHUBANESWAR, DISTRICT PURI.—Some of the bronze images discovered underground in the compound of the Godavarisha Mahavidyalaya and acquired by the Museum contain small inscrip tions of the Bhauma period.

RAJASTHAN

63. SONGIRA CHAHAMANA INSCRIPTIONS, DISTRICT SIROHI.—TWO Sanskrit inscrip tions in Nagari engraved on sculptured slabs from Tua belong to the reign of *Maharaja-kula* Chachigadeva of Jabalipura. One of them, dated Vikrama-*samvat* 13[..], refers to the making of a figure (probably of a man riding a horse caned in relief on the slab) in Mahesvara-grama by a person with the knowledge of Maham-Jakha. The other inscription, dated *Vikrama-samvat* 1326 (A.D. 1296), seems to record some grant in the same village with the knowledge of the *panchakula* headed by Maham-Jakha. An inscription in Sanskrit and Nagari from Varada, dated Vikrama-*samvat* 1347 (A.D. 1291), belongs to the reign of *Maharajakula* Samantasimha and records the grant of an *arahatta* probably by a queen (name lost) in Vrahada-grama for making provision for the *ashta-hnika* worship and offerings in the Mahavira-*chaitya* at Chandana-*vihara.*

UTTAR PRADESH

64. PRAKRIT INSCRIPTION, MUNICIPAL MUSEUM, ALLAHABAD.—Engraved on a part of a stone railing discovered at Kausambi, this fragmentary epigraph in Brahmi of about the first century B.C. mentions a person (probably the donor whose name is lost) described as Gotiputa and Gahapati. Some of the names of his ancestors such as Eja-vati and her son Vadi and his wife Koseliya (Kausalya) are also mentioned in the record.

65. INSCRIBED SEAL, KAUSAMBI, DISTRICT ALLAHABAD.—An inscribed seal bearing the name Dhanabhuti in the Brahmi script of first century B.C. came from Kausambi. This Dhanabhuti has been identified by Professor K.D. Bajpai with king Dhanabhuti I mentioned in the Bharhut inscriptions.

66. INSCRIBED SEALING, KAUSAMBI, DISTRICT ALLAHABAD.—A clay sealing from Kausambi bears the name *yaksha-Dhanasri* in Brahmi characters of about A.D. 300.

67. INSCRIPTIONS FROM KAPILADHARA, DISTRICT VARANASI.—One of them in Sanskrit, dated Vikrama-*samvat* 1251 (A.D. 1194), records the construction of the temple of god Vrishabhadhvaja by *thakkura* Lakshmidhara of Vastavya-kula. The other three inscriptions are dated both in Vikrama-5amvaf1712 and in Saka 1577 (A.D. 1655-56) and records the excavation of the tank Kapiladhara by the Keladi brothers Sivappa-nayaka and Venkatappa-nayaka of the Keladi-nayaka family. Of them, one is in Sanskrit, the second in a local dialect and the third in Kannada.

ARABIC AND PERSIAN INSCRIPTIONS[1]

ANDHRA PRADESH

1. INSCRIPTION OF THE BAHMANIS, DISTRICT MAHBUBNAGAR.—A fresh inscription of Sultan Humayun Shah Bahmani from Pargi, making a valuable addition to the very few inscriptions of this king, records that 'Ali, son of Shaikh Hasan Dhasharwani, evidently a foreigner who had settled in India, constructed a mosque in A.H. 864 (A.D. 1460).

2. INSCRIPTION OF THE MUGHALS, DISTRICT MEDAK.—An inscription of the reign of Aurangzeb from Patancheru states that Haji Khan, the *Shiqdar*, constructed a strong fort in A.H. 1110 (A.D. 1698) under the orders of Nawwab Jansipar Khan and great Khan Rustam Dil Khan.

3. INSCRIPTIONS OF THE QUTB SHAHIS, DISTRICTS MEDAK AND NALGONDA.—A re cord of Muhammad Quli Qutb Shah of Golkonda' from Medak registers the construction of a bastion by one Ahmad in A.H. 1011 (A.D. 1602). An epigraph from a mosque at Gazinagar, District Nalgonda, states that the mosque was built and designated at Bait-i-Ibrahim Qutb-Shahi in A.H. 984 (A.D. 1576-77).

4. MISCELLANEOUS INSCRIPTIONS, DISTRICTS MEDAK AND NALGONDA.—An important, but fragmentary and hence undated inscription, in characters of about the sixteenth century, from Palat, District Medak, contains the text of a grant recording that the *mauda* Palat situated in the *pargana* of Naupura(?) was endowed for the maintenance of the mosque and the services of the *imam* (leader of prayers) and his descendants; it concludes with an imprecation against any Muslim, Brahmana or Sudra violator. An epitaph from Devarkonda, District Nalgonda, dated A.H. 1084 (A.D. 1673), records the death of an official Hasan, son of Khuda Baksh, the *naib-i-ghaibat* (deputy in absence, i.e., governor).

5. INSCRIPTIONS OF THE ASAF JAHIS OF HYDERABAD, DISTRICT NALGONDA.—One of the two records of the Asaf Jahi dynasty, from Nalgonda, while referring itself to the reign of Nawwab Fath Jang, the *sipahsalar*, by whom evidently the founder of the Asaf Jahi dynasty, Nizamu'1-Mulk Asaf Jah I, is meant, records that Haji 'Abdu'l-Karim Baig of Balkh was made *the faujdar* and *amin* of Nalgonda under the orders of the *sadr* and that he constructed the mosque and reservoir in A.H. 1147 (A.D. 1734-35). The other epigraph, also from Nalgonda, belongs to the reign of Sikandar Asaf Jah and states that Mir 'Alam, the prime minister *(diwan)*, with the object of providing comfort to the travellers at large, constructed a *sarai,* a mosque and a well in A.H. 1222 (A.D. 1807-08), the work having been carried out by Ghazi Khan under the overall charge of Dula Khan.

BIHAR

6. MISCELLANEOUS RECORDS, DISTRICTS MONGHYR AND PATNA.—An epigraph from Charuanwan, District Monghyr, records the construction of a mosque by the saint Makhdum Shaikh Amun in A. H. 984 (A.D. 1576). A record from Patna, composed by Sakin, records the foundation of a mosque by one Begam Sahiba through the efforts of Haji Sa'adat and its completion in A.H. 1202 (A.D. 1787-88) by Firuz Jung. Another inscription, also from Patna, is an epitaph composed by a celebrated Persian literateur, 'Ishqi, which records A. H. 1211 (A.D. 1796-97) as the date of the demise of the

1 Information from the Superintendent for Arabic and Persian Inscriptions of the Survey.

saint Shah Ghulam Hasan. A third record from the same place, composed by another well-known Persian author and poet, 'Ibrati, records the construction of the *'Idgah* on which it was fixed by Khalifa Shah'Ibadu'1-Lah in A.H. 1258 (A. D. 1842-43).

7. INSCRIPTIONS OF THE LATER MUGHALS, DISTRICT PATNA.—Of the three records of Shah Warn II, all from Patna, the one dated A. H. 1187 (A. D. 1773-74) records the construction of the mosque called Ashrafu'l-Masajid; another, bearing the date A. H. 1191 (A. D. 1777), assigns the building of a mosque to Rai Jahan, and the third, dated in the regnal year 11 corresponding to A. H. 1183 (A. D. 1770), is an epitaph of one Mir Qutbu'd-Din.

DELHI

8. EIGHTEENTH-CENTURY EPITAPH, DELHI.—A tomb-stone, recovered from the core of the city-wall near Kashmiri Gate at Delhi, contains an epitaph of Muhammad, son of 'Ali, who died in A. H. 1186 (A. D. 1772).

GOA

9. INSCRIPTIONS OF THE 'ADIL SHAHIS, GOA.—Of the three interesting inscriptions from Goa Velha, Taluk Panjim, the earliest contains a royal order, issued in A. H. 978 (A. D. 1570-71), by 'Ali I following the representation made by Maliku'sh-Sharq Malik Zahid Baig, the *naib-i-ghaibat* of the *mu'amala* Guwa (Goa) against the practice of *naputrak* (?) whereby the property of any citizen who died without leaving behind him a male issue was confiscated to the state, thus resulting in hardship to relatives like daughters, brothers, etc. The order, discontinuing this unjust practice, was conveyed to the local officials, viz. *desais, muqaddams* and *khots,* and also to the chief religious authority of the district.

The other two epigraphs pertain to the reign of Ibrahim II. One, dated A. H. 1003 (A. D. 1594-95), records the construction of a bastion called Burj-i-Fath during the time of the great Malik 'Abdu'l-Malik, the *thanadar* of Talkokan region and specifically refers to 'troubled times'. The other, which is partly obliterated, mentions the construction of a mosque called Masjid-i-Fath during the reign of the king. While other details including the date are lost, it is almost certain that the mosque was built at about the same time as the bastion.

GUJARAT

10. MISCELLANEOUS INSCRIPTIONS, DISTRICTS AHMADABAD, BHAUNAGAR, JUNAGARH AND RAJKOT.—An interesting inscription, incised on the wall of the Khapra-Kodiya cave at Junagadh, comprises a visitor's record stating that Shaikh 'Ali, a servant of the lofty court of Haji Muhammad of Bhiyana, visited the place in A. H. 743 (A. D. 1342-43). An epitaph from Vasavad, District Rajkot, indicates the grave as that of Nasir, (son of) Mitha (?), entitled Khan-i-A'zam Ulugh Khan but does not quote the year of his death. A record from the sea-coast town of Gogha, District Bhaunagar, records the construction of a mosque in A. H. 1023 (A. D. 1614) by Mu'allim Bakhshu, son of Mu'allim Husain, and is written by Shaikha, son of Da'ud. An inscription, from Sarkhej, District Ahmadabad, dated A. H. 1029 (A. D. 1619-20), states that Mir 'Abdu'l-Qasim of noble lineage, who was entrusted with trusteeship (evidently of the tomb of the saint Shaikh Ahmad Khattu at Sarkhej), constructed a mosque on the road to Sarkej

(i.e. Sarkhej). An inscription from Kharkadi in the same District, evidently set up during the early part of the last century, gives the dates of the birth and death and other particulars of the saint Baha'ud Din Abu'l-Barakat Abu Muhammad Zakariyya, son of Muhammad Ghauth and grandson of Abu Bakr al-Quraishi, who was born in A. H. 566 (A. D. 1171) and died in A. II. 666 (A. D. 1267).

11. INSCRIPTIONS OF THE SULTANS OF GUJARAT, DISTRICT BHAUNAGAR.—The earlier of the two inscriptions of the Sultans of Gujarat, both housed in the Gandhi Smarak Museum, Bhaunagar, is bilingual, but it is too damaged to yield sufficient in formation. However, it seems to contain a royal order issued by Sultan Ahmad I and to mention Malik Mujahidu'-l-Mulk. The other epigraph, which is also badly damaged, records the erection of a mosque in A. H. 954 (A. D. 1547) during the reign of Sultan Mahmud III by Sayyid Sadiq, a descendant of the famous saint Sayyid Outb-id Alam Bukhari who was a grandson of the celebrated Makhdum Jahaniyan Jahan-gasht.

12. INSCRIPTION OF THE MUGHALS, DISTRICT SURAT.—An inscription of the reign of Shah Jahan, found at Navsari, assigns the construction of the Shahi mosque on which it is fixed to Muhammad Yazdi, an official.

MADHYA PRADESH

13. INSCRIPTIONS OF THE MUGHALS, DISTRICTS MANDASOR, RAJGARH AND UJJAIN.—A record of Akbar from Ujjain gives A. H. 982 (A. D. 1574-75) and A. H. 986 (A. p. 1578-79) respectively as the dates of the foundation and completion of a *sarai*, for public use, built by Shah Fakhru'd-Din. Another record of the same emperor, from the same place, states that having received orders from his master, Nawwab Muhammad Sharif Khan, Mahram the *kotwal* constructed the gateway of the citadel of Sarangpur and *chabutara-i-kotwali* in A. H. 996 (A. D. 1587-88). An inscription from Sarangpur, also of the time of Akbar, provides yet another record of the emperor's itinerary during his march to the Deccan in A. H. 1008 (A. D. 1600). Written by the famous nobleman Muhammad Ma'sum' Nami al-Bakkari, it records that the emperor had camped at the place.

Of the three inscriptions of Shah Jahan, the earliest, from Sarangpur, inscribed by Hafiz Shaikh Da'ud, records the construction of the mosque by Sayyid Khwaja Sabir, son of Khwaja-i-Hisari better known as Nasiri Khan (later on Khan-i-Dauran Bahadur), under the supervision of Khwaja Phul, in A. H. 1040 (A. D. 1631). The other inscription, from Ujjain, records the construction of a gate in A. H. 1049 (A. D. 1639-40) during the governorship of Khan-i-Dauran Bahadur, and under the superintendence of Sidi 'Aziz. The third inscription, from Mandasor, is slightly damaged and assigns the construction of a mosque to Sayyid Shah Ali, the *sahib-i-jagir* (fief-holder) of the *sarkar* of Mandsur in A. H. 1063 (A. D. 1653).

A record of Aurangzeb, from Khilchipur, District Mandasor, states that in A.H. 1081 (A. D. 1670-71), Ni'mat Khan, son of Salim Khan and grandson of Rahim Khan of the Miyana Afghan community, who had come from Ajmer and settled at Khilchipur, constructed a *burj* (tower) and a *haveli*.

14. MISCELLANEOUS INSCRIPTIONS, DISTRICTS MANDASOR, RAJGARH AND UJJAIN.—A fragmentary inscription from Ujjain seems to refer to the remission of some levies ordered by Maliku'sh-Sharq Malik Mahmud; it seems to bear the date A. H. 840 (A. p.

1436-37). An epigraph, from Mandasor, composed by Ghaibi (or Ghaibati), records the foundation of the market of Mandsur in A. H. 1083 (A. D. 1672-73) at the request of Beni Das, by Mirza Momin, an official of Mirza Sarbaland Khan. A record from Sarangpur contains the text of an order, issued in regnal year 15 or A. H. 1084 (A. D. 1673), putting a stop to the practice of compelling the grocers and dealers in grain to accept for sale the produce of crown-land or land of the officials at a rate higher than the current one. Another inscription from Ujjain records the praises of a garden constructed in A. H. 1089 (A. D. 1678-79) by Mukhtar Khan, a high dignitary. Still another record from the same place gives A. H. 1111 (A. D. 1699-1700) as the date of the construction of a mosque and a *madrasa* during the governorship of Mukhtar Khan II by his servant Khwaja Shakib. A fragmentary inscription from Sarangpur forms the epitaph of one Babban who is identified in part of the text incised in a different and, perhaps later hand with Shujawal Khan, the famous noble of Sher Shah. Another interesting, but badly-damaged, record from the same place comprises an order issued by the ruling emperor, whose name as well as the date are lost, to rectify the loss of revenue resulting from the migration of the weavers *(koshtis)* of the *qasba* of Sarangpur, who were subjected to free labour *(bigar)*, to other places. A modern but nevertheless interesting inscription in Urdu and local dialect, dated Vikrama-samvat 1949 (A. D. 1892-93), from Khilchipur, District Rajgarh, records that the Baghari community of the town and *pargana* of Khal-chipur took the oath of the goddess Chamunda and donkey-curse *(gadigal)* assuring that they and their descendants would not break into the houses, steal animals, grass, vegetables, etc., and indulge in such other anti-social activities. It is not mentioned at whose instance, if at all, this oath of good behaviour was taken.

15. INSCRIPTIONS OF THE SULTANS OF MALWA, DISTRICTS RAJGARH AND UJJAIN.—An inscription from Ujjain records that a mosque was constructed by Dilawar Khan in A. H. 806 (A. D. 1403-04). An interesting epigraph from Sarangpur, District Rajgarh, records the construction of a *madrasa* (college) in A. H. 899 (A. D. 1493), during the governorship of Rustam Khan, *muqti'* of the *shiq* of Sarangpur, by Maliku'sh-Sharq Malik Bidarat Khani, the *majmu'dar,* when the reigning monarch was Ghiyathu'd-Din Khalji.

MADRAS

16. MISCELLANEOUS INSCRIPTIONS, DISTRICT SOUTH ARCOT, THANJAVUR, TIRUCHCHIRAPPALLI AND TIRUNELVELI.—An inscription on a bastion at Gingee, District South Arcot, records that Gingee was conquered in A. H. 1058 (A. p. 1648) during the time of 'Ambar Khan and *havaladari* of Sayyid Ya'qub; it was inscribed by 'Abdu'l-lah, the *dabir* (secretary), 'Ambar Khani. A record from Nagore assigns the erection in the year A. H. 1137 (A. D. 1724-25) of a lofty tower in the *dargah* of the saint Sayyid 'Abdu'l-Qadir Manikpuri to Da'ud Khan, son of Isma'il Khan, originally an inhabitant of Shahjahanpur situated in the vicinity of the capital city of Dihli (Delhi), who had settled down in Mahmud-Bandar. A third inscription from Tiruchchirappalli records the construction of a mosque by 'Abdu'r-Rahim Khan, an official, in A. H. 1160 (A. D. 1747). Another record from Nagore, dated A. H. 1196 (A.D. 1782), states that two edifices were constructed by way of offering to the saint Sayyid 'Abdu'l-Qadir Manikpuri under the superintendence of Haji 'Abdu'l-Qadir, *nakhuda* of Nagore.

17. INSCRIPTION OF THE MARATHA RULERS, DISTRICT THANJAVUR.—An inscription from Nagore, District Thanjavur, dated A. H. 1166 (A. D. 1753), records the construction of the tower in eleven stages in the *dargah* of the saint Hadrat Qadir Sahib at

Nagore-Bandar, by the order of Maharaja Pratap Singh, and also refers to the foundation of Qadir-Penth near Tulja Maharaj-Penth. It further mentions *sarkhail* Manoji Rao, governor Ranoji Rao Bhonsle and *amin* Shaikh 'Abdu'l-Malik.

18. INSCRIPTIONS OF THE NAWWABS OF ARCOT, DISTRICTS TIRUCHCHIRAPPALLI AND TIRUNELVELI.—A record from Tiruchchirappalli, dated A. H. 1173 (A. p. 1759-60), assigns the construction of the dome over the grave of the saint to the chief queen of Siraju'd-Daula (i.e. the Arcot Nawwab). An epigraph from Talaiyuttu, District Tirunelveli, records the construction of two *sarais* in A. H. 1200 (A. D. 1785-86) by I`tibar Khan, while another from Pettai in the same District also mentions the same I`tibar Khan as having constructed a mosque at the instance of Wala Jah. The third inscription, from Tirunelveli, is dated A. H. 1202 (A. D. 1787-88) and records that I`tibar Khan also built a mosque there by the order of Umdatu'l-Mulk Amir-i-A'zam (i.e. the Arcot Nawwab). The full name of this official is given in another epigraph from Pettai as Muhammad I`tibar Khan Bahadur'.

MAHARASHTRA

19. INSCRIPTION OF THE FARUQI DYNASTY OF KHANDESH, DISTRICT DHULIA.—An interesting inscription from Nandurbar, District Dhulia, records the construction of a mosque by Malik Jaman (Chaman or Chiman), son of Raidhan, in A. H. 846 (?) (A. D 1442) during the reign of Mubarak Shah.

20. INSCRIPTION OF THE MUGHALS, DISTRICT DHULIA.—An inscription of Jahangir from Nandurbar states that the building constructed by Lutfu'llah *alias* (i. e. entitled) Bahai Khan, son of Khusrau Khan Thatti (i.e. of Thatta), was completed in A. H. 1032 (A. D. 1623).

21. INSCRIPTIONS OF THE SULTANS OF GUJARAT, DISTRICT DHULIA.—A very impor tant epigraph of Sultan Mahmud I, originally from Bhamer, District Dhulia, but now attached to a mosque at Nizampur in the same District, states that a mosque was cons tructed in A. H. 886 (A. D. 1481-82) by Maliku'sh-Sharq Malik Musa, son of 'Imadu'l-Mulk, the conqueror of the fort (of Bhamer). Another inscription at the same place, but originally from Bhamer, states that Sarkhail Ahmad, son of Shu'aib, a servant of Khan-i-A'zam Dilair Khan and Dilawar Khan constructed a mosque in regnal year 4, corresponding to A. H. 936 (A. D. 1529-30), during the reign of Sultan Bahadur. A third inscription at the same place, but again ^originally from Bhamer, refers itself to the reign of Sultan Mahmud III and assigns the construction of a mosque to Shaikh Muham mad Khwaja Alp Khani, later Dilawar Khani, Khatri, in A. H. 954 (A. D. 1547).

22. MISCELLANEOUS INSCRIPTIONS, DISTRICTS DHULIA, KOLHAPUR AND SATARA.—An epigraph from Nandurbar, composed by Nigahi, records the construction of the tomb of Sayyid 'Alau'd-Din and its lofty portal in A. H. 985 (A.D. 1577-78) by Naurang Khan. Another record from Nandurbar gives A. H. 1032 (A. D. 1622-23) as the date of the costruction of a lofty building of the kitchen in the *dargah* of the saint (Sayyid 'Alau'd-Din), through the efforts of Khwaja Sultan Muhammad, during the govern-norship of Khan-i-Khanan. One more inscription from the same place records the cons truction of a well by an official Mughal 'Ali Khan in A. H. 1139 (A. D. 1726-27). About fifteen epigraphs from Karad, dated in different years of the sixteenth century, form epitaphs of men and women from different walks of life, who were of foreign origin: e.g. Khwaja Ali Khan Tabrizi; Khunza Bibi, daughter of Qadi 'Alishah; Bibi Jamal; Shahin Aqa; Jahan Malik, wife of Isma'il; Fatima Sultan; Bija Sultan; Sayyid Sharafu'd-Din entitled Rasul Khan; Bibi Aghashah; and the like.

23. INSCRIPTION OF THE BAHMANI KINGS, DISTRICT KOLHAPUR.—An inscription, now preserved in the Kolhapur Museum, but originally from Panhala in the same Dis trict, belongs to the reign of Mahmud Shah Bahmani and states that a tank was cons tructed at Panala during the rule and ministership of 'Adil Khan Ghazi (i.e. Isma'il 'Adil Khan), at the instance of Malik Iskander Haidari, the *thanadar,* in the year A. H. 917 (A. D. 1511-12).

24. INSCRIPTIONS OF THE 'ADIL SHAHIS, DISTRICTS KOLHAPUR AND SATARA.—Of the four inscriptions belonging to Ibrahim I, all from Panhala, the earliest, dated A. H. 946 (A. D. 1539-40), records the construction at Panhala of a bastion and a water-reservoir with a structure over it by Yusuf, the *abdar* (water-keeper). Another states that the old buildings were repaired and new ones constructed in the capital of Panhala fort in A. H. 954 (A. D. 1547-48) during the time of Malik Da'ud Aqa, the *naib-i-ghaibat* who also constructed a reservoir; its text was written by Salar, son of Ahmad, the *dabir* (secretary). The third records the exavation of the Nag-jhari spring from the mountain by the same Da'ud Aqa in the following year i.e. in A. H. 955 (A. D. 1548-49). And the fourth records that Malik Khidr, the *sar-khawass,* constructed the water-tank, called *chashma-i-Khidr,* in A. H. 964 (A. D. 1556-57).

An inscription of 'Ali I, originally from Panhala but now preserved in the Kolhapur Museum, records the construction of a bastion of the fort called *burj-i-qudrat* in A. H. 985 (A. D. 1577-78) by Shamasu'd-Din, the *naib* (deputy of the governor).

Of the four inscriptions of Ibrahim II, the one from Vishalgarh, dated Shuhur era 985 equivalent to A. H. 991 (A. D. 1583), records the construction of the bastion called *daulat-burj* by Dilawar Khan under the supervision of Sayyid Mahmud. It is written by Jalal Sharafu'd-Din. Another from Panhala assigns the construction in A. H. 994 (A. D. 1585-86) of the gate of the fort to Maqsud Khan, an official; its text is written by Mulla Rajab. The third, also from Panhala, and written by the same scribe, states that an elegant palace on the terrace of the fort, one *nauras-gaz* in width and one *nauras-gaz* in height, was constructed by Maqsud Aqa in Shuhur era 1008 i.e. A. H. 1017 (A. D. 1608-09). According to the fourth record from Apti (Ibrahim-pura) situated at the foot of the Panhala hill, the same Maqsud Aqa constructed a mosque and a *haud* (water-tank) in Shuhur era 1011 or A. H. 1020 (A. D. 1611-12). This epigraph is also written by Mulla Rajab, who appears to have been a professional calli-graphist. The last 'Adil Shahi record from Maharashtra, unfortunately undated, found at Karad, District Satara, registers the grant of one *chawar* land for the burial-ground of the Muslims and the *'Idgah* by the reigning monarch 'Ali (II?).

MYSORE

25. MISCELLANEOUS INSCRIPTIONS, DISTRICTS BELGAUM AND MANDYA.—An un dated but interesting record from Hukeri, District Belgaum, gives the text of *a mahdar* (decision by assembly) made by the *mahajana* and *balotiyan* (village-officials) of the *qasba* Hukeri to the effect that one *chawar* land of Jai Seti, situated in the vicinity of the *karanja* was endowed for the fountain *{karanja)* and the guest-house *(mihman-khana)* constructed by Mansur Khan and that of the said land, three-fourth was meant for the *karanja* and one-fourth for the guest-house. It also states that the land was given in custody of Miran, son of Hasan, and quotes in detail the names of all the persons attending the *mahdar.*

Fifteen epitaphs from Seringapatam District Mandya, commemorate the death or martyrdom of some prominent members of the court or the family of Tipu Sultan; some of them are Mir Muhammad 'Ali (d. A. H. 1202 or A. D. 1788), Arshad Baig Khan (d. A. H. 1203 or A. D. 1788), Burhanu'd-Din, Khwaja Aftab Khan, Shaikh Miran *sar-i-'askar* (chief of the army) and Muhammad Jahangir also *sar-i-'askar*, all of whom died on the same day in A. H. 1205 or A. D. 1790, Shahzada Nizamu'd-Din (d. A. H. 1206 or A. D. 1791) and Ruqayya Bibi (d. A. H. 1206 or A. D. 1792).

PANJAB

26. MISCELLANEOUS INSCRIPTIONS, DISTRICTS HISSAR, KARNAL AND ROHTAK.—The epigraph from Sonepat, District Rohtak, recording the construction of a mosque by Sayyid Abu Bakr Muhammad al-Husaini al-Fudaili, was in an earler notice stated to be dated A. H. 1181 (A. D. 1767-68); but on re-examination, it appears to be dated A. H. 481 (A. D. 1088). A record from Hansi, District Hissar, though undated, being fragmentary and damaged, but attributable to the reign of 'Alau'd-Din Khalji on palaeographical grounds, mentions Mas'ud, son of Muhammad Safahani as the builder *(mi'mar)* of a fort. An inscription from Kaithal, District Karnal, records the construction of the tomb of Shah Wilayat in A. H. 1069 (A. D. 1657-58) under the supervision of the *shiqdar* Mir Wali Baig, son of Mir Mu'inu'd-Din, when *the jagir* was in possession of Nawwab Qasim Khan.

27. INSCRIPTION OF THE LODI DYNASTY, DISTRICT PATIALA.—An inscription from Sirhind, District Patiala, gives A. H. 901 (A. D. 1495) as the date of the death of Bibi Jan, daughter of Sultan Buhlul Shah and records the construction of her tomb in the following year during the reign of her brother Sikandar Lodi.

RAJASTHAN

28. INSCRIPTION OF THE TUGHLUQS, DISTRICT BHARATPUR.—An important and interesting but badly-damaged record from Bayana, District Bharatpur, dated A. H. 803 (A. D. 1400-01) in the reign of Mahmud Shah, seems to refer to the chaos and hardships created by the invasion (of Timur) and to the desertion (of the fort) by people fleeing to Thangar(h) for refuge. It further seems to state that after the establishment of peace, mosques, etc., were reconstructed and the fort rehabilitated through the efforts of Iqbal Khan.

29. INSCRIPTION OF THE MUGHALS, DISTRICT NAGAUR.—A bilingual inscription of the time of Akbar, appearing on a temple at Run, records the name of an official whose name, ending in Das, is lost. Dated A. H. 984 (A. D. 1576), the epigraph gives the designation of the official as *karori* and quotes his native place as Gwalior.

UTTAR PRADESH

30. MISCELLANEOUS INSCRIPTIONS, DISTRICTS FAIZABAD AND FARRUKHABAD.—An epigraph from Kanauj records the construction of the tomb of the saint Shaikh Kabir Bala Pir during the governorship of Nawwab Bahadur Khan, son of Darya Khan Da'udzai. Though not dated, it was evidently inscribed in A. H. 1057 (A. D. 1647-48), the date of another contemporary record at the same place. A record from Akbarpur records the construction of a mosque in A. H. 1071 (A. D. 1660-61) by Muhammad Ja'far al-Husaini-al-Mazandarani, entitled Sa'adat Khan, and warns against its misuse.

31. INSCRIPTIONS OF THE MUGHALS, DISTRICTS FAIZABAD, FARRUKHABAD, JAUNPUR AND VARANASI.—An inscription of Akbar's time from Akbarpur, District Faizabad, records the construction of a bridge and a mosque by Muhammad Muhsin Khan in the year A. H. 977 (A. D. 1569-70) during the governorship of Muhammad Mun'im Khan. According to another inscription, the same bridge was remodelled in A. H. 1311, (A. D. 1894).

Three extremely important inscriptions of Shah Jahan were discovered at Kapila-dhara, District Varanasi : they are bilingual and are dated in the year A. H. 1065 (A. D. 1655). One of them records that a tank was excavated by (the brothers) Siwap (Sivappa) Nayak and Venkatap (Venkatappa) Nayak, servants *(fidwi)* of the emperor Shah Jahan. The other traces also their genealogy thus : sons of Sindap (Siddhappa) Nayak, son of Sankan (Samkana) Nayak *alias* Bain Raja of Karnatak. These records thus provide very valuable information, not found anywhere, indicating that these grandees, who belonged to the Nayaka family of Ikkeri, had accepted at least the vassalage, if not service, of the Mughal emperor.

Among the records of Aurangzeb, two from Kanauj assigns the construction of a mosque to Khalifa Shu'aib Qadiri in A. H. 1074 (A. D. 1663-64). Another from the same place states that Mahmud Khan, son of Salim Khan Tarin, constructed in A. H. 1076 (A. D. 1665-66) the gate of the *dargah* of the famous saint Shaikh Kabir Bala Pir. A third, also from Kanauj, states that the saint Muhammad Mahdi constructed the gate of the tomb of his father Shaikh Kabir Bala Pir with the help of Nawwab Dilair Khan, son of Darya Khan Ghoriya-Khail Da'udzai, in A. H. 1081 (A. D. 1670-71): the mason's name is given in the text as Chhinka.

32. INSCRIPTIONS OF THE SHARQIS, DISTRICT FARRUKHABAD.—A badly-damaged inscription of Ibrahim Shah from Kanauj assigns the construction of a lofty mosque to the king in A. H. 829 (A. D. 1426). A record of the reign of Husain Shah, from Rajgirhar, states that in A. H. 870 (A. D. 1465), the arched entrance *(taq)* of the tomb of the saint Shaikh Akhi Jamshid was constructed by Buddhan, son of Qutb Nur; its text is composed by the builder and written by 'Alam Mir.

33. INSCRIPTION OF THE TUGHLUQS, DISTRICT JAUNFUR.—This interesting inscription from Zafarabad, District Jaunpur, has been noticed more than once, but only incorrectly and incompletely. It records the construction of the fort *(hisar)* and designation of the newly-fortified city as Zafarabad by Malik Mai in A. H. 721 (A. D. 1321), during the reign of Ghiyathu'd-Din Tughluq Shah.

34. INSCRIPTION OF THE MALWA KINGS, DISTRICT JHANSI.—An epigraph from Talbahat, District Jhansi, records the construction of a mosque in A. H. 807 (A. D. 1405) by Dilawar Khan whose full name and titles are given as : Shamsu'd-Daulatwa'd-Din 'Amid, son of Da'ud Ghori.

35. INSCRIPTION OF A KALPI RULER, DISTRICT JHANSI.— An interesting epigraph from Erachh, District Jhansi, composed by one Mubarak, records that during his *iqta'-'dari,* Junaid Khan, the brother as well as prime minister of the king Mahmud Shah, reconstructed a magnificant mosque at the suggestion of Qadi Diyau'd-Din, his deputy as well as minister, in the year A. n. 811 (A. D. 1408). The epigraph has been wrongly assigned to Mahmud Shah of the Tughluq dynasty by scholars in the past.

WEST BENGAL

36. INSCRIPTION OF TOE SULTANS OF BENGAL, DISTRICT MALDA.—The inscription fixed on the entrance of the Sak Mohan mosque at Malda, already published by H. Bloch-mann and others, has been found, on re-examination, to be very likely an inscription of Jalalu'd-Din Muhammad Shah. Dated A. H. 830 (A. D. 1427), it is in Arabic verse and records the date of the completion of a mosque by Majlis Ashraf.

HI. NUMISMATICS AND TREASURE-TROVE[1]

ANDHRA PRADESH

1. VIJAYANAGARA COIN, METTUPALLI, DISTRICT KURNOOL.—A gold coin of the Vijayanagara period was picked up.

BIHAR

2. PUNCH-MARKED COINS, DISTRICT MONGHYR.—Eighty-two silver punch-marked coins were found as treasure-trove at Chakmaka and three silver and two copper ones from Sitnabad.

KERALA

3. COPPER CASKET AND SILVER ORNAMENTS, DISTRICT CALICUT.—A copper casket, silver waist-girdle, rings and bangles were discovered as treasure-trove.

MADHYA PRADESH

4. COPPER COIN OF SAMUDRAGUPTA, INDORE,—-A copper coin of Samudragupta with the legend *apratirathah* was noticed in the collection of Shri R. K. Sethi; it resembles the archer-type of this king's gold coins.

5. MEDIEVAL COPPER COINS, BHOJPUR, DISTRICT RAISEN.—Six Muslim coins including those of Nawwabs of Bhopal were recovered in debris-clearance.

6. EARLY COINS, ERAN, DISTRICT VIDISHA.—Seventy coins, ranging from punch-marked to Gupta, were found. More coins of Ramagupta, with the legend *Sri-Rama-gupta* and figure of three-headed Garuda on the obverse of some of them, were noticed.

7. EARLY COINS, UJJAIN AND VIDISHA.—On some copper coins were deciphered two names, Valaka and Danu, possibly of Scythian origin, who might have ruled over Malwa in the second-first century B. C.

MAHARASHTRA

8. MUGHAL COINS, DHAMAK, DISTRICT AMRAOTI.—Ten silver and twenty-one copper coins belonging to Aurangzeb, Farrukhsiyar, Muhammed Shah, 'Ahmad Shah and Shah 'Alam II were recovered as treasure-trove.

9. MEDIEVAL COINS, CHANDRAKHERA, DISTRICT CHANDA.—Three circular coins, probably of the Bahmani Sultans, were collected.

MYSORE

10. MEDIEVAL COINS, AIMANGALA, DISTRICT CHITALDRUG.—One hundred and eighty-four copper coins of the Bijapur kings were discovered.

1 Information from : 1 and 9, ths Superintendent of the Survey, South-eastern Circle; 2, the Superintendent of the Survey, Mid-eastern Circle; 5, 6 and 8 (6, also Professor K. D. Bajpal), the Superintendent of the Survey, Central Circle; 3 and 10-12, the Directors of Archaeology, Kerala and Mysore States; and 4, 7 and 13, Professor K. D. Bajpai.

11. COINS OF MYSORE RULERS, JAKKANAHALLI, DISTRICT HASSAN.—Seven hundred copper coins, mostly of Hyder 'AH and Tipu Sultan and a few of Krishnaraja Wadiyar III, were found in a hoard.

12. COINS OF LOCAL CHIEFS, BAJATHOOR, DISTRICT SOUTH KANARA.—Fourteen small *fanams* of debased gold, of the local chiefs ruling in the post-Vijayanagara period, were discovered.

UTTAR PRADESH

13. EARLY COPPER COINS OF AYODHYA, KAUSAMBI AND PANCHALA KINGS.—In addition to the six new kings of Kausambi reported last year (1962-63, p. 64.), the coins of five new rulers, viz., Navikamitra, Vijayamitra, Devamitra, Gomitra and Rudradeva—the last-mentioned king possibly the same as the one mentioned in the Allahabad pillar inscription of Samudragupta—came to light. A new Panchala and a ruler of Ayodhya, Baladeva, was also identified.

IV. OTHER IMPORTANT DISCOVERIES

ANDHRA PRADESH

1. EARLY AND MIDDLE STONE AGE AND MEGALITHIC SITES, DISTRICT CHITTOOR.—Shri M. Sivayya located dolmenoid cists at Bodigutta in the Madanapalli area, dolmens at Mushtur and stone-circles and dolmens at Tavalam. Around Bodigutta and at Aravavandlapalli, he found Middle Stone Age tools. From the latter locality, Early Stone Age tools and microliths were also obtained.

2. MEGALITHS, MALLAVARAM, DISTRICT GUNTUR.—Shri M. Sivayya located dolmenoid cists and stone-circles at Mallavaram in Taluk Palnad.

BIHAR

3. NORTHERN BLACK POLISHED WARE, GADKA-CHAK, DISTRICT BHAGALPUR.—Shri A. D. P. Singh found sherds of the N. B. P. Ware at a mound near village Gadka-Chak.

4. NORTHERN BLACK POLISHED WARE, BHADAUNI, DISTRICT GAYA.—Shri R. B. Narayan discovered a 7-m. high mound yielding the N. B. P. Ware at Bhadauni.

5. NEOLITHIC CELT, RAJGIR, DISTRICT PATNA.—A neolithic celt was discovered by Sri B. K. Sharan at Rajgir.

6. MEGALITHIC BURIALS, LOHARDAGA, DISTRICT RANCHI.—Shri B. K. Sharan noticed traces of megalithic burials at Lohardaga.

GUJARAT

7. EARLY AND MIDDLE STONE AGE TOOLS, DISTRICT JUNAGADH.—Shri K. V. Soundara Rajan identified a tool of the Early Stone Age at Sherdi. He also collected Middle Stone Age tools from the river-bank near Kankawati or Kuva very near Dharangadhara.

8. EARLY HISTORICAL SITES, DISTRICT JUNAGADH.—Shri K.V. Soundara Rajan located sites of the Kshatrapa period at Gebia, Kerala, Meli-Manjthi and Sherdi. At the last-mentioned site some silver-coated copper coins of Kumaragupta were also found besides the Red Polished Ware.

KERALA

9. ROCK-CUT CAVES, DISTRICT CALICUT.—The Director of Archaeology, Kerala, noticed rock-cut caves in Kumaranputhur, Taluk Tirur. The contents of the caves were badly tampered with and no associated finds were obtained from them.

10. TERRACOTTA FIGURINES, DISTRICT ERNAKULAM.—The Director of Archaeology, Kerala, found terracotta figurines in close association with megalithic potsherds near Periyar valley canal in Kodanad, Taluk Perumbavoor. The figurines consist of the heads of men and torso of a woman and parts of horns, possibly of a bull. The male figurine appears to be bearded.

11. ROCK-CUT CAVES, CHOONDAL, DISTRICT TRICHUR.—The Director of Archaeology, Kerala, located a rock-cut cave at Choondal in Taluk Talapally. The cave is of the type extensively found in Kerala. Vessels of the megalithic Black-and-red Ware, some intact and others broken, were recorded.

12. MEGALITHIC CISTS, PANDUPARA, DISTRICT TRICHUR.—The Director of Archaeology, Kerala, found megalithic cists both on the northern and southern sides of Pandupara amidst teak-plantations. They have unfortunately been badly despoiled and no further details can be gathered. Ruined temples are also reported from the area.

MADHYA PRADESH

13. MEDIEVAL SCULPTURES, DISTRICT BHIND.—Shri J. P. Srivastava discovered sculptures of Brahmanical and Jaina pantheon and architectural pieces at Baderi, Barahi Boreshvar (Dulhagan), Kot, Pariaya, Sakraya, Saparhand and Sankari, all in Tahsil Bhind.

14. MICROLITHS AND EARLY POTTERY, BARAKALAN, DISTRICT BHIND.—Shri J. P. Srivastava discovered at Barakalan sherds of the black-painted red ware, grey ware, black-and-red ware and the Northern Black Polished Ware along with a few microlithic flakes.

15. MEDIEVAL SCULPTURES, GUBRA, DISTRICT DAMOH.—Shri C. B. Trivedi discovered at Gubra a number of sculptures and architectural pieces in Kalachuri style. Notable among these were Mahisamardini and a *nagi.*

16. MEDIEVAL SCULPTURES, DISTRICT DATIA.—Shri M. C. Joshi and Shri L. M. Wahal noticed several stone sculptures, architectural members and bricks at Keolari, 8 km. north of Datia. The sculptures included images of Vishnu, Gajari-Siva with *matrikas* above it, Parvati, ten-armed headless Durga, Hara-Gauri, Ganesa, Varaha, *navagrahas,* Kubera, a broken figure of Parsvanatha and several *lingas.* At Randuwapura, 3 km. to the north-east of Keolari, were also found a collection of similar sculptures, among which mention may be made of an icon of Tara and mutilated Ardhanarisvara. The most important discovery made by them was that of a colossal *linga,* with divine figures in relief on all the four sides, found at Saimai, 3 km. to the north east of Randuwapura.

17. TERRACOTTA SEALINGS AND MEDIEVAL SCULPTURES, DISTRICT DATIA.—On the hill known as Guptesvara or Gopeshwar, in the neighbourhood of Barauni village, certain terracotta sealings were discovered by Shri M. C. Joshi and Shri L. M. Wahal amidst heaps of earth and brick-bats. The sealings are inscribed with the well-known Buddhist formula in the script of the ninth or tenth century A. D. and bear representation of a *stupa.* The icons found here are Brahmanical in affiliation and belong to the Pratihara and Chandella periods.

18. MEDIEVAL SCULPTURES, GANDHRAWAL, DISTRICT DEWAS.—Professor K. D. Bajpai found many sculptures of the Brahmanical and Jaina pantheon at Gandhrawal (ancient Gandharvapuri) on the Bhopal-Indore road. Special mention amongst these may be made of a multi-handed Chakresvari seated on a *garuda* (pl. L B).

19. LATE STONE AGE TOOLS, BAGH CAVE, DISTRICT DHAR.—Shri R. B. Narayan discovered microliths including cores and flakes near the caves at Bagh.

20. BUDDHIST BRONZES, PHOPHNER, DISTRICT EAST NIMAR.—Shri M. Venkataramayya reported the discovery of seven Buddhist bronzes along with five parasols at Phophner. Some of the bronzes bear dedicatory inscriptions in the Vakataka script of about the fifth century A. D. On stylistic grounds, while they resemble on the one hand the famous Sultanganj bronze statue of Buddha, on the other, they have an unmistakable affinity with the bronze statue of Buddha from Amaravati. The eyes appear to be painted or inlaid in white metal to indicate the eye-balls, while the pupils are painted in black. The body of Buddha appears to be painted in blue colour which does not appear like verdigris or copper sulphate exudation due to organic action on the metal. Save for one parasol none of the other four parasols discovered fits the statues.

21. MEDIEVAL SCULPTURES, MOHANA, DISTRICT INDORE.—Shri R. B. Narayan discovered stone sculptures of the Jaina pantheon at Mohana.

22. MICROLITHS AND EARLY POTTERY, PATALPANI, DISTRICT INDORE.—Shri R. B. Narayan discovered at Dharwada red-slipped, black-slipped, black-burnished and black-and-red wares. Microliths of non-geometrical shape, unassociated with pottery, were found by him at Patalpani.

23. MEDIEVAL SCULPTURES, DISTRICT JABALPUR.—Shri C. B. Trivedi discovered a number of sculptures of the Kalachuri period (eleventh-twelfth century A.D.) at Deori (Satdhara), Majhgawan, Marha, Sachuli and Singhli. A *sapta-matrika* panel from Kumbhi and various forms of Siva from Murwari were noteworthy.

24. STONE AGE TOOLS, DISTRICT JABALPUR.—Shri C. B. Trivedi found Middle Stone Age tools in the valleys of the Chhoti-Mahanadi, the Hiran and the Mauri-Nadi, the sites being Deori, Piparia (Chand), Ram-Khiria and Sagauna, all in Tahsil Sihora. Microliths were found at Ghughra and Kataria.

25. MIDDLE STONE AGE TOOLS, SITAMAU, DISTRICT MANDASOR.—Middle Stone Age tools of chert and jasper were discovered at Sitamau by Shri R. Sengupta and Shri M. D. Khare.

26. MIDDLE STONE AGE AND LATE STONE AGE TOOLS, DISTRICT MANDLA.—Shri S. P. Gupta and Shri C. B. Trivedi discovered tools at Bargaon and Shahpura, in Tahsil Niwas, respectively on the banks of the Sigli and Kasha nullahs.

Shri C. B. Trivedi discovered Middle Stone Age tools and microliths at Bhainsia-gaon, Dand-Bichhia, Kohka and Lutgaon in the valley of the Narmada, all in Tahsil Dindori. The sites were notable for the absence of gravels.

27. MEDIEVAL SCULPTURES, GURH, DISTRICT REWA.—-Professor K. D. Bajpai dis covered a colossal statue of Siva, 5-63 m. in height, in the hilly tract near village Gurh about 24 km. from Rewa. This four-handed colossal, statue holding various *ayudhas* was carved out of a huge red sandstone rock and was perhaps meant for being enshrined at Gurgi, the well-known site of the Saiva cult during the Kalachuri period. In the Gurh village itself well-preserved sculptures of the Brahmanical pantheon, assignable to the eleventh-twelfth century A.D., were also noticed. These included panels depicting Krishna-*lila* scenes, statues of Siva in various forms and of Parvati, Vishnu, Karttikeya, etc.

28. EARLY, MIDDLE AND LATE STONE AGE TOOLS, DISTRICT SAGAR. ___Dr. R V Joshi, Shri M. D. Khare and Shri A. Hamid found Early and Middle Stone Age tools

all of quartzite, in the valley of the river Bila at Bilgavan, Chhan and Gomatpur. Middle Stone Age tools, made from chert and chalcedony, were discovered in the vicinity of Banda and at Tinsi, both in Tahsil Banda.

29. MEDIEVAL TEMPLE, MARHAI, DISTRICT SATNA.—Professor K. D. Bajpai discovered a Chandella Siva temple at Marhai. The temple, built in the central Indian style, has a beautiful gateway, profusely carved with *mithuna* figures and other decorative patterns. There are some sculptures representing *apsarases* standing in graceful postures and *sardula-figures,* besides figurines of various gods and goddesses. Near by were found remains of some medieval Jaina temples and Jaina images.

In the Satna town itself was discovered a Bharhut piece of a cross-bar with a typical lotus-medallion, later used as a grinding-stone.

At Ramban, over 17 km. from Satna, were noticed Gupta sculptures comprising : goddess Kaumari riding on a peacock ; a door-jamb decorated with foilage, a female figure (river-goddess) with the attendant parasol-holder and a male *dvara-pala ;* and a stone piece showing Siva and Parvati seated in Kailasa.

30. EARLY AND LATE STONE AGE TOOLS, DISTRICT SEHORE.—A large number of microliths and fluted cores were collected from the painted rock-shelters at Manua, Bhanki-Tekri, Neori-Gupha and Ahmadabad area (in Bhopal). Early Stone Age tools were noticed at Govindpura near Heavy Electricals Ltd., Bhopal, by Shri C. B. Trivedi.

31. MEDIEVAL SCULPTURES, DISTRICT SEHORE.—At the well-known site of Bhojpur, a party, headed by Professor K.D. Bajpai, noticed a stone sculpture of *Udaremukha* (pl. LI A) having a human-faced belly. The party also discovered some interesting medieval sculptures at Ashapuri.

32. MEDIEVAL SCULPTURES, DISTRICT TIKAMGARH.—Professor K. D. Bajpai noticed some sculptures, mostly of the Chandella period, at Kundeshwar. Particular mention may be made of a big panel depicting the *sapta-matrikas* with various *ayudhas,* a statue representing a standing four-handed goddess and several ornamented heads. Other statues represent Hari-Hara, Vishnu, Surya, etc.

At Ahar in the same District were found several medieval sculptures including the upper part of a male figure wearing a tastefully-decorated crown and other ornaments and a gorgeous coiffure.

33. EARLY, MIDDLE AND LATE STONE AGE TOOLS, DISTRICT VIDISHA.—Shri M. Venkataramayya, Dr. R. V. Joshi and Shri M. D. Khare discovered tools at Gyaraspur and Tila. The area between the Public Works Department rest-house and the *stupa* seems to be a factory-site.

34. LATE GUPTA SCULPTURES, DISTRICT VIDISHA.—Shri M. D. Khare recovered from the Triveni temple at Besnagar a head (pl. LIB) of Vishnu (?) assignable to the Gupta period.

MAHARASHTRA

35. MEDIEVAL STRUCTURE, ELLORA, DISTRICT AURANGABAD.—The Superintendent, South-western Circle of the Survey, reported the discovery of a twelve-course brick structure, exposed 5m. below the present surface as a result of debris-clearance between, Caves 15 and 16. This structure, built on the debris of loose earth and stone chips, may be assigned to the medieval period.

MYSORE

36. MEDIEVAL SCULPTURES/ DISTRICTS COORG AND GULBARGA.—Shri M. Hanu-mantha Rao discovered some beautiful sculptures of the medieval period at Anjanagiri and Bettagiri in District Coorg and a seated Parsvanatha figure at Harasur in District Gulbarga. Besides, he also located temples with beautiful sculptures and finely-worked friezes at Chinchansur, Kalagi and Yevur.

37. RASHTRAKUTA TEMPLE WITH PALLAVA LION-PILLARS, SIRWAL, DISTRICT GUL-BARGA.—Shri M. Hanumantha Rao discovered a number of temples belonging to the Rashtrakutas and Later Chalukyas at Sirwal. Noteworthy amongst them is a small shrine comprising a *garbha-griha* and an *ardha-mandapa.* The two pillars supporting the latter resemble the lion-pillars of the Pallava architecture and are the first of their kind yet noticed in the Karnataka area except perhaps the one at Gangavara in District Bangalore. Besides, he also noticed a pond with a row of beautiful sculptures running all round the inner side depicting scenes from the *Ramayana, Mahabharata, Panchatantra*, etc., datable to the late Rashtrakuta period.

Of particular interest is the Siddhesvara temple belonging to about the twelfth century A.D. The temple has a unique plan with a central *garbha-griha* haying extensions on all the four sides with *ardha-mandapas* and *maha-mandapas* having again *ardha-mandapas* and *garbha-grihas* at the further end, thus forming four separate shrines on the four sides converging to a central shrine.

ORISSA

38. MICROLITHS, DISTRICT PURL—Shri R. P. Das found microliths near the campus of the Utkal University, Bhubaneshwar.

PANJAB

39. MEDIEVAL SCULPTURE, DISTRICT AMBALA.—Shri Lalman of the Department of Ancient Indian History and Culture, University of Panjab, discovered early and late medieval sculptures of grey sandstone at Jaintipur-Muradnagar and Morni-ke-tal in Tahsil Naraingarh. Noteworthy amongst them are Buddhist images, Siva-Parvati, Mahisasuramardini, etc.

40. PAINTED GREY WARE SITES, DISTRICT AMBALA.—Shri M. N. Deshpande discovered ancient mounds yielding the Painted Grey Ware and other early historic wares at Deen and Kal-Khera, both in Tahsil Jagadhri.

41. PROTOHISTORIC POTTERY, EARLY HISTORICAL SCULPTURES, TERRACOTTAS AND COINS, DISTRICT HISSAR.—Shri Suraj Bhan of the Department of Ancient Indian History and Culture, University of Panjab, and Acharya Bhagwandeva discovered: pottery, chert blades, sling-balls, terracotta cakes and bangles, characteristic of the mature Hara-ppan culture, at Rakhigarhi, about 11 km. to the south of Jind; the Painted Grey Ware at Hansi; Kushan coins at Bida Chikanvas, 11 km. to the west of Hissar on way to Agroha; terracottas and sculptures of the Yaudheya-Kushan period, coins and coin-moulds of the Indo-Greeks, Kushans and Yaudheyas at Naurangabad on Bhiwani-Rohtak road, 11 km. to the east of the former; and medieval sculptures of Vishnu and Brahma, all in buff sand stone, and copper coins of Samantadeva and silver coins of Farrukhsiyar and Shah 'Alam at Ahir-Majra, about 7 km. to the west of Gannaur railway-station.

42. PAINTED GREY WARE, THEH-POLAR DISTRICT KARNAL;—Shri Shankar Nath picked up sherds of the Painted Grey Ware at Theh-Polar near Siwan, already known as a site of the Indo-Greek period.

43. HARAPPAN SITE, MADIALA-KALAN, DISTRICT LUDHIANA.—Shri M. N. Deshpande discovered a Harappan site at Madiala-Kalan, 29 km. south-east of Ludhiana on the Grand Trunk road. The assemblage consists of painted pottery (pl. LII A) besides a large quantity of pottery with incised designs (pl. LII B) consisting of horizontal and criss-cross rulings and comb-like wavy lines.

44. MEDIEVAL SCULPTURES AND BRICK TEMPLES, DISTRICT SANGRUR.—Medieval Vishnu, Ganesa, Mahishasuramardini and Narasimha in buff or black stone were found by Shri Suraj Bhan and Acharya Bhagwandeva from Hath, Kalyat and Ramahrada. Besides, they also discovered two brick temples at Kalayat with curvilinear *sikharas* resembling in style the Baijnath temple. A highly-decorated gate of a temple in grey sandstone fixed to a later building near by was also noticed by them.

RAJASTHAN

45. MIDDLE STONE AGE TOOLS, PATAN, DISTRICT JHALAWAR.—Shri R. Sengupta and Shri M. D. Khare collected tools of the Middle Stone Age at Patan.

46. HISTORICAL SITE, NARHAR, DISTRICT JHUNJHUNU.—Shri K. N. Dikshit picked up painted and incised pottery of the early Christian era at Narhar near Pilani.

47. EARLY MEDIEVAL SCULPTURES, DISTRICT KOTAH.—The Director, Department of Archaeology and Museums, Rajasthan, reported the discovery of early medieval sculp tures.

UTTAR PRADESH

48. MEDIEVAL SCULPTURES, DISTRICT AGRA.—Some early medieval sculptures were discovered by Shri J. P. Gupta at Bidhauli, Ganeshpur, Kagarol and Mukhrai in Tahsil Kheragarh. He also noticed medieval images at Naraul in Tahsil Kiraoli.

49. ROCK-SHELTERS, DISTRICT AGRA.—Four rock-shelters, one each at Badrauli, Jajauli, Patsal and Rasilpur in Tahsil Kirauli, were noticed by Shri J. P. Gupta. A few of them also contain renderings of the deer, bulls in herds and human beings in black and red pigments.

50. HARAPPAN MOUND, GULISTANPUR, DISTRICT BULANDSHAHR.—Shri R. P. Sharma brought to light an extensive mound at Gulistanpur in Pargana Dadri, Tahsil Sikandrabad. It is noteworthy that the western part of the mound yielded Harappan pottery while the eastern part showed only the occurrence of the Painted Grey Ware and plain grey ware.

51. GUPTA IMAGES, SULAIMANPUR, DISTRICT GHAZIPUR.—A mound containing remains of the Gupta period in the form of images, of Uma-Mahesvara, and *ekamukha-* and *chaturmukha-lingas* was discovered by Shri R. G. Pandey at Sulaimanpur.

52. NORTHERN BLACK POLISHED WARE, BHADRAS, DISTRICT KANPUR.—Shri M. C. Joshi reported the occurrence of the N.B.P. Ware, besides sherds of red and brownish wares, at Bhadras, 3 km. to the north-west of Ghatampur.

53. PAINTED GREY WARE, KASERI, DISTRICT MEERUT.—Shri M. N. Deshpande located an early historical site yielding Painted Grey Ware and other associated wares at Kaseri near Hindon air-port (under construction).

54. NORTHERN BLACK POLISHED WARE AND OTHER WARES, SAMBHAL, DISTRICT MORADABAD.—Shri L. M. Wahal found the N.B.P. Ware and plain grey, black-polished and coarse red wares at Sambhal.

55. HARAPPAN AND OCHRE-COLOURED WARE, DISTRICT SAHARANPUR.—Shri Shankar Nath noticed Harappan pottery at Bargaon and Pilakhni and Ochre-coloured Ware at Bakarka, Budha-Khera, Ghathera and Hardakheri, all within a radius of 8 km.

56. PAINTED GREY WARE, DISTRICT SAHARANPUR.—Shri M. N. Deshpande, assisted by Shri K. N. Dikshit, explored a Painted Grey Ware site at Rasulpur near Fatehpur rest-house, 3 km. from Chutmalpur on the Dehradun-Saharanpur road and at Sarsawa, 16 km. on the Saharanpur-Ambala road. At the latter place, traces of a moat, perhaps part of a fortification-system, were also observed.

57. BUDDHA IMAGES FROM VOTIVE STUPA, SARNATH, DISTRICT VARANASI.—Four images of Buddha, belonging to the Gupta and later periods, were found inside a votive *stupa* at Sarnath. One of these, a beautiful piece of sculpture, carved out in the best traditions of the Gupta art, depicts a standing Buddha in *varada-mudra* (pl. LXI).

WEST BENGAL

58. BLACK-AND-RED WARE, DISTRICT BIRBHUM.—Shri V. Sen found black-and-red ware characteristic of the Panduk and Mahisdal complex at Dauli, Haraipur, Kagas and Mundira.

59. MICROLITHS, DISTRICT BIRBHUM.—Shri R. P. Das found microliths at Siwan and Santiniketan.

Shri V. Sen found microlithic cores and tools including blades, lunates and triangles at Dangalpara and Maldiha.

V. MUSEUMS

1. RAJPUTANA MUSEUM, AJMER.—With financial help from the Central Govern ment, considerable progress was made in modernizing the galleries. Wall-cases for terracottas and paintings were prepared and lighting-arrangement introduced in the Sculpture Section. Pedestals were also prepared for the remaining important sculptural exhibits to be displayed. No outstanding acquisition was made during the year except two coins, one silver and the other copper, of the medieval period.

2. MUNICIPAL MUSEUM, ALLAHABAD.—Fresh acquisitions included four sculptures, fifty-three copper coins, three silver coins and seventeen seals and sealings from different sites in Uttar Pradesh. Of the terracottas, three plaques of the Sunga period are most outstanding. One of them, from Ahichchhatra, depicts a conventionalized dragon on one side and a lotus on the other. The second one comes from Kausambi and depicts a lady riding a horse below a *triratna symbol.* Both are rare specimens. The third plaque also comes from Kausambi and has a figure of the goddess Lakshmi standing on a lotus. It is about 28 cm. high and is one of the finest examples of Sunga art.

The Museum also acquired a number of sculptures from a newly-discovered ruined temple of the early medieval period at the village of Jamsot, about 110 km. south of Allahabad. The temple belongs to the Chandella period and particularly resembles the Duladeo temple of Khajuraho. The sculptures brought from this site include five fine *sala-bhanjikas,* a life-size Bhairava and a Brahmani.

Among the seals and sealings, the following are noteworthy: two stone seals—one bearing the legend *Bhavitasa* and the other *Mulasa* in the Brahmi script of the second century B.C.; a clay sealing with the legend *Bodhinandisa* in Gupta characters; a copper seal with a *trisula-symbol* and the legend *Vagdharmasya;* and a clay seal with the legend *Asvaghosa* in the characters of the second-third century A.D. The last two came from Jhusi.

3. ARCHAEOLOGICAL MUSEUM, AMARAVATI.—The new museum-building is nearing completion. AH the stone sculptures were accessioned. Some sculptures were sent on loan from this Museum to the Exhibition of Indian Art held in Japan in 1963.

4. ARCHAEOLOGICAL MUSEUM, AMBER.—Reorganization work is in progress. Wall-cases were fitted for the display of terracottas, pottery, bricks, etc., chronologically. Arrangements are being made for housing the various collections on approved lines so as to facilitate study by scholars.

5. GOVERNMENT MUSEUM, BANGALORE.—The Museum acquired six stone sculptures of the Pala period from the Indian Museum, Calcutta. All the sculptures in the Museum are being rearranged in the new building. Wooden pedestals for the sculptures are also being provided.

6. MUSEUM AND PICTURE-GALLERY, BARODA.—The work of modernizing the dis play undertaken last year (1962-63, p. 73) was further continued this year. The old desk-type show-cases in the Prehistoric Section were removed and new vertical dust-proof show-cases in steel were provided. The display of seals, palaeoliths, neoliths etc., was completely modernized to give the whole section a pleasing look. Similarly, the display of the Egyptian antiquities in the Egyptian gallery was considerably improved.

Of the several acquisitions, a stone image of Surya of the Chola period is the most outstanding. A brass image of Lakshmi-Narayana, of the sixteenth-seventeenth century, and a Nepalese bronze image of Amitayush are also interesting.

7. STATE MUSEUM, BHARATPUR.—Four wall-cases were provided in the Painting and Armoury Galleries. Arrangement for modern lighting was also made in the Pain tings Section. Pedestals for important sculptures were provided.

8. ARCHAEOLOGICAL MUSEUM, BIJAPUR.—The collection of old paintings was chemically treated so as to arrest deterioration. The first floor of the Museum-building was extensively repaired and colour-washed. The galleries are being reorganized.

9. GANGA GOLDEN JUBILEE MUSEUM, BIKANER.—The galleries of paintings were provided with modern plastic-covered lights for better display. Bronzes were rearranged in a more attractive manner.

10. ARCHAEOLOGICAL MUSEUM, BODH-GAYA.—A new gallery with modern show cases and suitable background colour, for bronzes and minor antiquities, was started. A small Buddha-image of the tenth century was the solitary acquisition of the year. A photographic exhibition was organized in the Museum in March, 1964, on the occasion of the meeting of the Mahabodhi Temple Advisory Board.

11. PRINCE OF WALES MUSEUM OF WESTERN INDIA, BOMBAY.—The fresh acquisitions comprise fourteen stone sculptures, fourteen bronzes, ten terracottas and eight stucco objects. A marble image of Vishnu of the twelfth century was sent on loan to the Exhibition of Indian Art in Japan.

12. ASUTOSH MUSEUM OF INDIAN ART, CALCUTTA.—The Asutosh Museum of Indian Art, University of Calcutta, was further enriched in the year under review by the acquisition of about one thousand objects by purchase and through exploration and excavation at Chandraketugarh. The antiquities consisted mainly of terracottas, stone objects, bronzes, coins, precious and semiprecious stone beads, wooden objects, ivories, about a hundred medieval paintings, textile and minor antiquities, in addition to objects of traditional arts.

As usual, the largest number of this year's acquisition of terracotta objects came from lower deltaic Bengal. Consequent upon intensive exploration at Chandraketugarh and its neighbourhood more than two hundred pieces, including rare and exquisite terracotta toy-carts, erotic tablets, seals, sealings, etc., datable from the second century B.C. to the sixth century A.D. were recovered. A slightly-mutilated terracotta plaque depicting a typical early Sri standing on lotus and holding lotus-stalks, presumably of the second century B.C., collected by Shri K. G. Goswami, deserves special mention. A unique terracotta toy-cart, showing a demon devouring with evident glee a young crocodile, with several other figures including a human child and goat collected in the bag on his lap as other items of his gruesome menu was collected by Shri Benoy Krishna Biswas. He also collected a mutilated toy-cart showing a royal couple riding a camel, a toy-cart, datable to about the first century B.C., depicting the mythical bird Sampati carrying his prey, an elephant, in its talons and a mutilated Gupta plaque depicting a lady gracefully stepping down the stairs of a *river-ghat* balancing a pitcher on her hip. Mention may also be made of a seated hollow Kushan Kubera in the round, collected by Shri Santosh Kumar Bose from Chandraketugarh. Other noteworthy collections include a startling terracotta relief showing a dancing male figure of about the first century B.C., secured by Shri C. R.

Roychoudhury from Porkarna, District Bankura. Shri Roychoudhury also collected a set of fourteen silver punch-marked coins from Chandraketugarh and Harinarayanapur and a rare silver coin of Skandagupta of the bull type from Chandraketugarh.

As a result of exploration of Purulia District, Shri Santosh Kumar Bose collected some remarkable stone sculptures and architectural, fragments of the tenth-eleventh centuries from the vicinity of Jhalda. Among these sculptures special mention may be made of a shrine containing Rishabhanatha in sandstone standing in *kayotsarga* pose, flanked by pairs of six *tirthankaras* on each side, and a miniature votive temple carved with standing *tirthankara-images* on four sides, proving that the region was a Jaina stronghold. A sandstone Surya image (pl. LIII A) in high relief, belonging to the eighth-ninth century, collected perhaps from Mayurbhanj, is an antiquarian piece of interest, as its entire back is covered with a dedicatory inscription in the so-called Kalinga characters. Of the medieval terracotta temple-plaques acquired from West Bengal two pieces may be specially noted: a secular scene, in two panels, of a Nawwab smoking a *hukka* borne on a palanquin by liveried attendants, confronted by a pair of fully-uniformed European mercenaries, from Hooghly, of the seventeenth century; and a medallion representing *rasa-mandala* from Bankura, which may be ascribed to a century later.

Among the metal sculptures, particular mention may be made of a seated bronze Devi from Orissa, apparently of the Konarak period. From the iconographical point of view a fourteenth-century strident ten-handed Mahishamardini (pl. LIII B) of very good workmanship, surrounded by an engraved foliated niche crowned by a *kalasa* supported by a pair of parrots, from Burdwan, is worth mentioning. A large bronze figure of Dandesvari riding a monumental elephant, from Dandakaranya, is another excellent example of the traditional tribal art recalling bamboo and cane-originals. A pair of inscribed bronze seated Jaina *tirthankaras,* datable to about the sixteenth century, were acquisitions from Rajasthan.

Of the minor antiquities from Orissa, an ivory object of intricate and complex workmanship, obviously of the late medieval period, envisaging Narasimha in *utkuti-tasana* pose, seated under a naga-canopy but crowned by Jagannatha, and a *mithuna* bone carving are very interesting.

The collection of wooden sculptures from West Bengal, Orissa and Rajasthan are no less interesting. They include colourful chariot-panels and their decorative dolls of the eighteenth-nineteenth century from West Bengal, a remarkable painted figure of a prince with an attendant carved in the round, *nayikas,* a life-size *dakini,* a small panel with boldly-composed erotic couple from Ganjam, Orissa, and a painted standing female figure from Rajasthan.

The paintings-collection of the Museum was enriched by the acquisition of Rajasthani miniatures of different schools, besides several large painted Krishna-lila temple-hangings of unusual quality from Nathadwara, an uncommon painting representing a princely couple as ascetic in a forest, probably of the Bharatpur school with strong Mughal influence, painted ivory cards, Gujarati jewellery-caskets and illuminated Rajasthani horoscopes of the eighteenth century. The list cannot be completed without a reference to some rare textiles, viz., a very old richly-embroidered Baluchar *sari* of the post-Mughal period and a skilfully-woven Rajasthani tapestry of about the same time.

13. INDIAN MUSEUM, CALCUTTA.—Twenty-two artefacts of stone and bone res-presenting different cultural horizons of the Stone Age in Denmark were acquired in exchange, and twenty-one excavated objects from Arikamedu were obtained on loan.

The Bharhut, Gandhara and Sculpture Galleries were re-opened to the public after about a year since their closure in November, 1962, due to the Emergency.

Steps were also taken for re-opening the Coin Room and the Prehistory Gallery, while the modernization of the Inscriptions Gallery on the first-floor corridors is in progress. The organization of a new Bronze Gallery, in the former so-called Muslim Gallery, is nearing completion.

Twenty-two sculptures were loaned to the Exhibition of Indian Art in Japan and United States of America.

14. BHURI SINGH MUSEUM, CHAMBA.—Ten paintings and one drawing-sketch in Pahari style, of the nineteenth century, five copper-plate inscriptions, three bronze images of early nineteenth century and two sculptures of the medieval period, besides a good number of old textile objects of handicrafts, photographs and replicas of important Indian sculptures were added to the Museum. A stone door-lintel, found at Devi-Kothi in Churah Tahsil of Chamba District, with the figure of Ganesa and floral decoration is a beautiful acquisition.

15. STATE MUSEUM, CHANDIGARH.—The new museum-building is yet to be constructed. In the meantime some exhibits were provisionally shifted from Patiala and Simla to a portion allotted in the School of Arts building at Chandigarh. Sec also items 36 and 43 below.

16. CHANDRADHARI MUSEUM, DARBHANGA.—Reorganization and improvement were effected by way of providing better lighting-arrangement as well as labels and charts in the galleries. Ten terracotta plaques of Paharpur were secured on loan from the Archaeological Survey of India.

17. RED FORT MUSEUM, DELHI.—TWO show-cases of calligraphy were remodelled. A new show-case of Mughal bolsters was added. Labels were provided to eighteen of the show-cases. Index-cards for eleven thousand coins were prepared.

18. STATE MUSEUM, GAUHATI.—Of the new acquisitions the following objects are noteworthy: a standing statue of Hari-Hara with an inscription on its back side from Deopani, of the ninth-tenth century; a four-armed standing Vishnu image from Pingaleswar near Gauhati, of the sixteenth-seventeenth century; a sixteen-sided copper tray lined with brass plates, highly decorated with floral and bird designs in silver; twenty plaster-casts of images received from the National Museum, New Delhi; and a hoard of two hundred and forty silver coins found in a jar unearthed in the Singlijan Tea Estate near Dibrugarh, twenty-nine of them belonging to Shah 'Alam II and the rest to Ahom rulers.

19. ARCHAEOLOGICAL MUSEUM, HALEBID.—The sculptures in the collection of the Museum were classified and systematically arranged in the form of an open-air museum. Fresh acquisitions included three sculpture-pieces and twenty-four wood-carvings.

20. ARCHAEOLOGICAL MUSEUM, HAMPI.—TWO plaster-casts of the statues of king Krishnadevaraya and his consort Tirumaladevi, now in the Tirupati temple, were prepared and put on display.

21. STATE MUSEUM, HYDERABAD.—The Art Section was reorganized. Some of the large portraits of Golconda kings, such as 'Abdu'llah Qutb Shah, 'Abdu'l Hasan Tana Shah and Malliaqua Bai, received an elaborate chemical treatment in the laboratory of the National Museum at New Delhi through the courtesy of the Director thereof. The copies of paintings in the Ajanta Pavilion were rearranged in chronological order to

facilitate their study according to different schools of art from the earliest period. In the adjoining two rooms, copies of Ajanta and Ellora paintings were exhibited. The coin-collection was further enriched by as many as twenty-one fresh hoards of coins from different Districts of Andhra Pradesh as treasure-troves. The total number of coins of fresh hoards is two thousand, one hundred and twenty-four. Of these four hundred and two are of gold, two hundred and sixteen of base gold, one thousand, two hundred and sixty-two of silver and two hundred and forty-four of copper. They represent various dynasties such as Tughluq, Bahmani, Sultans of Malabar, Vijayanagara, Mughal, Asaf Jahi, Knights of Malta and East India Company. Most of the gold coins belong to Pratapa Krishnaraya, Achyutaraya and Devaraya of the Vijayanagara dynasty. Two belong to the period of Ghiyasu'd-Din Tughluq, issued from Delhi mint in A.H. 724, and another two to Muhammad III of the same dynasty, struck in the name of Abbasi Khalifa Abu Rabi al-Mustakti I from Delhi mint in A.H. 742. The next in importance is the coin of Ghiyathu'd-Din Muhammad Damghan Shah, Sultan of Malabar. Possibly no gold coin of this dynasty has so far been published. There is also a Bahmani coin belonging to the period of 'Alau'd-Din Ahmad Shah II.

22. CENTRAL MUSEUM, JAIPUR.—The reorganization of the Central Hall in conformity with modern methods by providing cultural dioramas, etc., is in progress. Arrangements for giving auditory effect to cultural themes were also initiated. Visitors are now provided with ear-phones to enable them to experience auditory effects side by side with visual ones. Four additional wall-cases depicting the cultural evolution of Rajasthan were added to the gallery. The gallery was also provided with a sound-column, through which the visitor would hear the talks on history of Rajasthan's art and culture at appointed hours each day.

23. SARDAR MUSEUM, JODHPUR.—The Paintings Section was provided with modern lighting-arrangements and fitted with wall-cases, besides more than a dozen pedestals in the Central Hall.

24. ARCHAEOLOGICAL MUSEUM, KHAJURAHO.—A building was obtained from the State Government for housing the present open-air collection. Arrangements for displaying the exhibits in this new building are in progress.

25. ARCHAEOLOGICAL MUSEUM, KONDAPUR.—The galleries were fitted with false ceilings. The exhibits are being arranged. Three new sections, displaying personal ornaments, tools and miscellaneous objects, were opened.

26. MUSEUM AND SARASWATI-BHANDAR, KOTAH.—Arrangements were made for providing plastic-covered tube-lights to the Paintings Section. Fresh acquisitions included a number of sculptures from different sites in Kotah District such as Ramgarh, Bhanda-Devra, Kakurni, etc.

27. LOCAL MUSEUM, KRISHNAPURAM.—This museum, recently started, houses antiquities collected from the neighbouring areas.

28. FORT ST. GEORGE MUSEUM, MADRAS.—The historic locks of Fort St. George were displayed in a remodelled show-case. A new show-case was added for displaying the sketch of the pickman in action.

29. GOVERNMENT MUSEUM, MADRAS.—The fresh acquisitions included ten terracottas from Paharpur received from the Archaeological Survey of India, a standing figure

of Budha (tenth-eleventh century) from Tiruvalanjuli, District Thanjavur, two stone sculptures of Mahavira, from District Chingleput, and bronze images from District Ramnad. Copies of mural paintings from Tirumalaipuram, District Tirunelveli, and Tiruparangode, District South Malabar, were prepared for exhibition. The bronzes were shifted to a new building known as the Bronze Gallery, where they were properly displayed. The construction of modernized built-in cases with concealed lighting in the Metalware Gallery was completed and the exhibits displayed therein in an attractive setting.

30. SRIMANTHI BAI MEMORIAL GOVERNMENT MUSEUM. MANGALORE.—The Museum acquired a life-size statue of Matsyendranatha from Kadri.

31. ARCHAEOLOGICAL MUSEUM, MATHURA.—Some of the important acquisitions made during the year were painted terracottas from Sonkh, a coin-mould and a torso, probably depicting a *naga-deity,* also from Sonkh. Most specimens in the reserve terra cotta collection were arranged in show-cases and some provided with wooden pedestals.

32. MUSEUM, DEPARTMENT OF ARCHAEOLOGY, MYSORE.—A stone inscription of the Ganga Dynasty from Sirigunda, District Chikmagalur, was the most outstanding of the fresh acquisitions.

33. ARCHAEOLOGICAL MUSEUM, NAGARJUNAKONDA.—A few sculptures were sent on loan to the Exhibition of Indian Art in Japan. All the antiquities in the valley were shifted to the new museum on the hill-top, where they are being arranged for dis play.

34. NATIONAL MUSEUM, NEW DELHI.—The fresh archaeological acquisitions numbered five hundred and sixteen and included prehistoric tools, terracottas, stone and bronze sculptures, etc. A photograhic exhibition of the Harappan site of Lothal was arranged. On the occasion of the International Congress of Orientalists in January, 1964, two exhibitions, one of the antiquities from Kalibangan and Eran, obtained through the courtesy of the Archaeological Survey of India and the University of Saugor respectively, and the other of rare manuscripts of India, obtained from different manuscript-collections in India, were arranged. A representative collection of copper-plates was displayed in the built-in wall-cases. Select sculptures were installed in the rotunda of the ground floor to serve as an additional sculpture-gallery. A number of protohistoric objects, stuccoes, bronzes and stone sculptures were sent to the Exhibition of Indian Art in Japan!

At the instance of the Ministry of External Affairs, Government of India, the Museum made available from its collection two images of the Pala period, one representing Buddha and the other showing Vishnu, to be sent to the Saigon Museum and to the International Hall of Residence, London, respectively, so as to represent Indian art.

35. MUSEUM, PADMANABHAPURA.—The old museum-building was demolished and plans are afoot for a new one in harmony with the adjoining palace-building.

36. STATE MUSEUM, PATIALA.—Part of the State Museum kept at Patiala is awaiting its transfer to Chandigarh, where a new building is to come up. See also items 15 and 43.

37. PATNA MUSEUM, PATNA.—Checking of the Museum-collection and reorganization of the galleries are in progress. The Mauryan sculptures were rearranged The archaeological objects were classified and properly stored. The Museum received on loan from the K.P. Jayaswal Research Institute, Patna, a Mauryan buff sandstone

column-head, with four bullocks on two sides of the rectangular block, found in Patna city. Ten terracottas from Paharpur were received on loan from the Archaeological Survey of India.

38. ARCHAEOLOGICAL MUSEUM, UNIVERSITY OF SAUGOR, SAGAR.—The fresh acquisition through purchases and exploration included three stone sculptures from Satna District, seventeen terracottas from Mathura, Ahichchhatra and Kausambi, and ninety-one coins. Of the terracotta figurines those representing the mother-goddess with richly-ornamented heads were very conspicuous. Of the coins, fifty-four were tribal and the remaining silver punch-marked; the tribal coins included those of Eran, Ujjain, Kausambi, Panchala and Naga.

39. ARCHAEOLOGICAL MUSEUM, SANCHI.—Progress was made in the arrange ment of exhibits in the new building.

40. ARCHAEOLOGICAL MUSEUM, SARNATH.—Reorganization, specially in the Gupta Gallery, is in progress.

41. TIPU SULTAN MUSEUM, SERINGAPATAM.—The fresh acquisitions included an iron cannon of Tipu Sultan's time, a pamphlet entitled 'The Struggle of Tipu Sultan against the British Colonial Power' with its Russian equivalent and twenty-four impressions of Persian inscriptions of Tipu Sultan.

42. DISTRICT MUSEUM, SHIMOGA.—The collection in the newly-started Museum includes a large number of sculptures, coins, inscriptions and manuscripts.

43. STATE MUSEUM, SIMLA.—The part of the Panjab State Archaeological Museum housed at Simla is awaiting its transfer to Chandigarh where a new building is shortly to come up. See also items 15 and 36.

44. STATE MUSEUM, SRINAGAR.—Fragmentary sculptures obtained from diggings at site at Khurhome, some of them with inscriptions in Kharoshthi characters were acquir ed. Another acquisition was a beautiful square stone, flattened at the base with a hole in the centre, obtained from Inderkot.

45. STATE MUSEUM, TRIVANDRUM.—Dioramic display was started. Implements of the Early and Late Stone Ages were exhibited in a glass-case with the paintings of man in action in the background. Stone sculptures were mounted on plain teakwood pedestals and exhibited against background paintings illustrating the selection of the stone for carving and stages of carving.

VI. EXPEDITION OUTSIDE INDIA

ICONOGRAPHICAL SURVEY IN NEPAL

An iconographical survey in Nepal was carried out jointly by the Department of Archaeology and Culture of His Majesty's Government, Nepal, and the Archaeological Survey of India under the direction of Shri Krishna Deva of the Survey in the months of May and June 1963. An extensive survey was made of the icons in the temples (cf. cover) as well as of the stray images in the Katmandu valley with adequate photographic documentation.

Nepal has a rich variety of image-types both of the Brahmanical and Buddhist religions. Significantly enough, the earliest images available in Nepal are all Brahmanical and predominantly Vaishnava, and no Buddhist images earlier than the seventh century have been found. The valley has yielded fine images, made between the fifth and tenth centuries, of numerous Vaishnava and Saiva deities and of Surya and Brahma and of various forms of Devis, including Parvati, Kali, Chandi and the *sapta-matrikas.* The Vaishnava deities include Vishnu as Sridhara, Garuda-Narayana, Seshasayi and Visvarupa and the Vaishnava incarnations of Bhu-Varaha, Narasimha, Vamana or Trivikrama and Krishna. The Trivikrama images (pl. LIV), which incidentally constitute the earliest dated sculptures of Nepal, are informed by elemental power and dynamism, characteristic of the early Chalukyan art of India. The sculpture of Vishnu as Visvarupa (pl. LVI A) is a unique piece, strongly reminiscent of the famous seven-headed Siva from Parel in conception and expression. Nepal has also yielded numerous *lingas* of the symbolic and the iconic types, the latter comprising largely *chaturmukha-lingas,* besides some figures of Ganesa and Kumara and excellent seated images of Siva-Parvati enjoying domestic bliss in Kailasa (pl. LV) which have an unmistakable Rashtrakuta flavour.

Like the Brahmanical images, the earlier Buddhist images, too, are seen to have striking affinities with the Indian images in theme as well as in treatment and comprise simple but elegantly-modelled figures of Lokesvara, Tara (pl. LVII A) and Mayadevi (pl. LVII B). But from the tenth century, the art-idioms and conventions of Nepal increasingly assert themselves and the icons show unmistakable traits of local physiognomy and facial features, which together with the distinctive art-conventions of Nepal tend towards greater stylization and complexity in course of the centuries. The plastic activity continued in full vigour till the close of the seventeenth century, though the momentum was not completely lost even in the eighteenth century.

The images are made of stone, bronze or brass, wood and terracotta and largely come from the numerous Brahmanical temples and Buddhist shrines and monasteries which dot the valley. Particularly interesting are the figures on the wooden struts, which reveal an amazing variety of Lokesvara types and figures of different deities including the *nakshatras* (constellations) on the Buddhist shrines and monasteries and deities of the Hindu pantheon with a predominance of the figures of Bhairavas and Chandis on the Brahmanical temples.

Among the rare iconographic types may be mentioned Siva as Ekapada-Trimurti (pl. LVIII A), Chandra (the moon-god) riding a chariot of geese, Mahisha-sambara (pl. LVIII B) and Vishnu in the *ardha-nari* (androgynous) form (pl. LVI B), locally called Lakshmi-Narayana. Four-armed and eight-armed images of the last deity are found in large numbers throughout the valley together with the more familiar types of Vishnu figures.

From the eleventh century, hundreds of Buddhist deities were conceived and fashioned under the influence of Tantrayana and Vajrayana sects, which gained special popularity in Nepal. Many of these reveal a marked impact of Tantric Saivism which flourished in the valley simultaneously. The interfusion between Buddhism and Brahmanism led to complex iconographical forms revealing Buddhist deities with Brahmanical features and Brahmanical deities with Buddhist traits, the latter exemplified by a number of Saiva and Vaishnava deities holding among other weapons *vajra* and *vajra-ghanta*, which are usually associated with the Vajrayana deities. The iconographical synthesis between Buddhism and Brahmanism is graphically illustrated by some figures of Mahakala in the Sundari-Chowk, Patan, depicting on their pedestal a frieze showing a repeat pattern of the *stupa* alternating with the Siva-*linga*.

Since Buddhism is a living religion in Nepal, she has kept alive rich traditions of a varied Buddhist pantheon. This, added to the phenomenal number of Hindu deities found in the valley, renders Nepal a veritable mine of iconographic wealth.

PRESERVATION OF MONUMENTS

MONUMENTS OF NATIONAL IMPORTANCE

CENTRAL CIRCLE

Madhya Pradesh

1. TEMPLE, NOHTA, DISTRICT DAMOH.—The platform was made watertight by the filling up of the open joints in the masonry and the surroundings of the temple were rendered neat and tidy by levelling and dressing.

2. FORT, ATER, DISTRICT DHAR.—The fortification-wall was cleared of growth of all vegetation and the damages caused thereby were made good.

3. ROCK-CUT CAVES, BAGH, DISTRICT DHAR.—The work of clearance of soft material from the rock-roof of Caves 4 and 5, eventually for concreting the surface for being made watertight, was kept in progress. Cavities in the overlying mass near Cave 2 which had been collecting water were filled up. Besides, vegetation from the rock facade and the area around the caves was cleared.

4. BHOJASALA AND KAMAL MAULA'S MOSQUE, DHAR.—The dislodged stones of the pavement of the courtyard were re-set after replacing the decayed pieces. The open joints in the masonry of western facade were filled up by grouting and pointing.

5. LAT-KI-MASJID, DHAR.—The terrace of the monument was made watertight by the laying of a fresh layer of lime-concrete after the picking up of the decayed concrete. The damaged flooring of the prayer-hall of the mosque was repaired by fresh flagstones.

6. GROUP OF MONUMENTS, MANDU, DISTRICT DHAR.—In addition to an extensive jungle-clearance, making of the wall-tops watertight and reconditioning of the approach-roads to the different monuments, the work of laying fresh concrete over the terrace of Ashrafi-Mahal, started last year (1962-63, p. 79), was extended to the top of cells as well. The Jami-Masjid, Hindola-Mahal and Jahaz-Mahal were cleared of debris and floors of the cells of these monuments were repaired.

7. WATER-PALACE, SADALPUR, DISTRICT DHAR.—Repairs of various nature, like pointing the open joints of facade-stones, patch-repairs to concrete, etc., were carried out to improve the condition of the monument.

8. FORT, ASIRGARH, DISTRICT EAST NIMAR.—The gateways of the fort and the mosque inside were repaired by the pointing of open joints of the masonry, concreting of the floor, etc.

9. FORT, BURHANPUR, DISTRICT EAST NIMAR.—The structure in country-bricks in the palace was repaired by underpining and pointing of the open joints.

10. TOMB OF SHAH NAWAZ KHAN, BURHANPUR, DISTRICT EAST NIMAR.—The decayed plaster on the dome was replaced by a fresh coat of plaster. The terrace of the *naqqarkhana* attached to the tomb was given a layer of fresh lime-concrete.

11. TOMB OF SHAH SHUJA, BURHANPUR, DISTRICT EAST NIMAR.—The patches of exposed surfaces of the walls of the tomb were plastered and the broken edges were filleted. Open joints in the masonry of the platform were pointed.

12. PALACES, MAHAL-GULARA, DISTRICT EAST NIMAR.—TO protect the foundations of the monuments from the scouring action of the river Utaoli, pitching was done on the riverside.

13. CHAUBARA-DERA, UN, DISTRICT EAST NIMAR.—The *sikhara* of the temple was made watertight by the filling up of the wide open joints with concreted mortar.

14. TEMPLE OF MAHAKALESVARA, UN, DISTRICT EAST NIMAR.—The sanctum of the temple was cleared of all fallen debris and the old members stacked for re-use in future repairs.

15. MAHADEVA TEMPLE, AMROL, DISTRICT GWALIOR.—Besides clearance of the site, the loose sculptures scattered around were neatly arranged.

16. KHUNI-DARWAZA, CHANDERI, DISTRICT GUNA.—The ancient structure was relieved of modern accretions over the *kanguras* and the bulged portions of the facade were re-set after dismantling.

17. NIZAMU'D-DIN'S TOMB, CHANDERI, DISTRICT GUNA.—-The floorings of the five tombs inside the compound, which had deteriorated, were repaired.

18. CHAUSATH-YOGINI TEMPLE, BHERAGHAT, DISTRICT JABALPUR.--The roof of the colonnade was made watertight and the pathways were reconditioned.

19. TAPSI-MATH, BILHARI, DISTRICT JABALPUR.—The leaking terrace was repaired with a layer of fresh lime-concrete.

20. ROCK-CUT TEMPLES, DHAMNER, DISTRICT MANDASOR.—Repairing the side-walls of the passage leading to the temple of Dharmanatha with cement-concrete duly tinted to match the laterite-surface was continued.

21. BEGAM-MAHAL, CHAUGAN-RYOTARI, DISTRICT MANDLA.—The exposed wall-tops of the monument were made watertight after the clearance of vegetation-growth.

22. SAIVITE TEMPLE, BHOJPUR, DISTRICT RAISEN.—The original features of the plinth were exposed to view by the removal of the accumulated debris.

23. BUDDHIST MONUMENTS, SANCHI, DISTRICT RAISEN.—Besides the usual repairs to and general maintenance of the monuments, a flagstone pathway was provided between Monastery 51 and Stupa 2.

24. BIJAMANDAL MOSQUE, VIDISHA.—The pavement of the courtyard of the mosque was repaired by the fixing of new slabs in place of old and decayed ones.

Rajasthan

25. OLD TEMPLE NEAR CHANDRABHAGA, DISTRICT JHALAWAR.—The open joints in the apron and floor of the temple were filled up.

26. SIVA TEMPLE, CHARCHOMA, DISTRICT KOTAH.—The sunken pavement was raised and re-set in the original level, using new slabs wherever necessary.

EASTERN CIRCLE

Assam

27. CACHARI RUINS, KHASPUR, DISTRICT CACHAR.—The brickwork of the collapsed dwarf-wall supporting the plinth of the Ramachandi temple was rebuilt and the external face plastered with *lime-surkhi* mortar.

28. ROCK-CUT SCULPTURES, GAUHATI, DISTRICT KAMRUP.—The crevices in the sculpture-bearing rock were cleared of rank vegetation and filled up with concreted mortar.

29. DEVIDOL, GAURISAGAR, DISTRICT SIBSAGAR.—In continuation of the work undertaken last year (1962-63, p. 81), the four lower pinnacles were rebuilt with specially-manufactured bricks and plastered with *lime-surkhi* mortar. The inside wall-surfaces and ceiling of the *mandapa* and *antarala* were replastered. The open joints of the ashlar-veneering of the temple were grouted with liquid cement-mortar and recess-pointed. The damaged" brickwork of the compound-wall was rebuilt and the joints recess-pointed.

30. SIBDOL, GAURISAGAR, DISTRICT SIBSAGAR.—The damaged compound-wall was rebuilt and its top made watertight.

31. VISHNUDOL, GAURISAGAR, DISTRICT SIBSAGAR.—The open joints in the brick work at the entrance were filled up with toned cement-mortar and the compound cleared of trees and vegetation and dressed.

32. GHANASYAM'S HOUSE, JAYSAGAR, DISTRICT SIBSAGAR.—Some of the missing terracotta plaques on the walls were replaced by specially-manufactured plaques. The dilapidated compound-wall was rebuilt and the ground levelled and dressed.

33. VISHNUDOL, JAYSAGAR, DISTRICT SIBSAGAR.—Rank vegetation on the *sikhara* was uprooted and the damaged brickwork rebuilt. The cracks in the roofs of the out houses were filled up.

34. DEVIDOL, SIBSAGAR.—In continuation of last year's work (1962-63, p. 82), the *sikharas* and the cornices were plastered, with a careful reproduction of the ornamental mouldings. The stone apron around the temple was rebuilt. The inside surfaces of the *garbha-griha, antarala* and the ceiling of the *mandapa* were replastered. The damaged Sine-concrete floor of the temple was renewed.

35. SIBDOL, SIBSAGAR.—In continuation of last year's work (1962-63, p. 82), the rebuilding of the damaged ashlar-masonry of the *garbha-griha* remained in progress. The open joints in the ashlar-veneering of the facades were grouted and recess-pointed.

36. VISHNUDOL, SIBSAGAR.—Re-laying of fresh lime-concrete on the roof of the *mandapa* and the floor of the sanctum, started last year, was completed.

Orissa

37. BUDDHIST REMAINS, RATNAGIRI, DISTRICT CUTTACK.— Repairs to the damaged brickwork of the walls of the cells of Monastery 1 were continued (1962-63, p. 82). The tops of the walls of Monastery 2 were made watertight by the re-setting of the top three courses of bricks in lime-*surkhi*-cement mortar. The decayed veneer of the brickwork of the small temple in the forecourt of Monastery 1 was reconstructed and the brick-pavement re-laid.

38. LINGARAJA TEMPLE, BHUBANESWAR, DISTRICT PURI.—The uneven stone floor of the sanctum of the Lingaraja and Parvati temples was re-set in a proper slope for the drainage of ritual-water. The worn-out stones of the pavement and the steps were replaced. Wire-mesh ceilings were provided at the *mandapa* and *nata-mandira* of the Lingaraja temple. The open drain to the south of the eastern gate was repaired and provided with stone-covering. The unpaved portions of the premises were cleared of rank vegetation and scattered stone blocks were neatly stacked in rows.

39. VARAHI TEMPLE, CHAURASI, DISTRICT PURL—Trees and the growth of rank vegetation on the *sikhara* and the *mandapa* were uprooted and the crevices and open joints filled up with concreted mortar. Temporary support to the cracked roof-slabs of the *mandapa* was provided by brick pillars.

40. CHAUSATH-YOGINI TEMPLE, HIRAPUR, DISTRICT PURL—The uneven stone pavement at the entrance was re-set and the gate was provided with a door fitted with expanded-metal. The area around the temple was levelled and dressed for proper drainage.

41. CAVES, KHANDAGIRI-UDAYAGIRI, DISTRICT PURL—The rebuilding of the retaining-walls in front of Cave 14 of Udayagiri and the flanks of the approach-ramp, started last year (1962-63, p. 82), was completed.

42. SUN TEMPLE, KONARAK, DISTRICT PURL—The work of injecting liquid cement-mortar, mixed with ironite as the water-proofing material, into the foundation-masonry to prevent the capillarity of the sub-soil water was kept in progress (1962-63, p. 82) on the eastern side of the temple.

Tripura

43. GUNAVATI GROUP OF TEMPLES, UDAIPUR, TRIPURA.—Decayed and salt-affected bricks of the walls were replaced by new bricks in lime-cement mortar.

West Bengal

44. SIDDHESVARA TEMPLE, BAHULARA, DISTRICT BANKURA.—The temple was cleared of vegetation-growth on the surfaces and the damages caused thereby were made good. The open joints of the arch-masonry at the entrance were recess-pointed.

45. RADHA-MADHAVA TEMPLE, VISHNUPUR, DISTRICT BANKURA.—The earlier brick enclosure-wall, exposed last year, was raised and the top made watertight.

46. RASA-MANCHA, VISHNUPUR, DISTRICT BANKURA.—The damaged floor of the basement on the western and southern sides was repaired with lime-concrete.

47. TOMBS OF BAHRAM SAKKA, SHER AFGHAN AND NAWAB QUTBU'D-DIN, BURDWAN.—A portion of the brick compound-wall which had fallen down during heavy rains was rebuilt.

48. JAINA BRICK TEMPLE, DAWALA, DISTRICT BURDWAN.—-Following its protection, the temple was cleared of large trees and other vegetation on the brickwork and the com pound was cleared of debris and levelled.

49. DARGAH OF ZAFAR GHAZI, TRIBENI, DISTRICT HOOGHLY.—The compound was cleared of debris and the ground levelled. The exposed wall-tops of the tomb were made watertight. The damaged portions of the floor of the mosque and the tomb were repaired

by the laying of fresh lime-concrete. The missing brick apron around the mosque was restored. To prevent erosion of earth in front of the tomb, wooden piles were driven along the tank-side for consolidation. Deep rain-cuts were filled up with rammed earth.

50. DAKHIL-DARWAZA, GAUR, DISTRICT MALDA.—The work of repairing the damaged brickwork of the arched facades was taken up and kept in progress.

51. GUMTI GATE, GAUR, DISTRICT MALDA.—The roof-terrace was re-laid with fresh lime-concrete. The open joints of the brick walls were recess-pointed. Collapsible iron-gates were fixed to the openings of the monument for better protection.

52. GUNMANT MOSQUE, GAUR, DISTRICT MALDA.—Decayed patches of the roof-terrace were re-laid with fresh lime-concrete. For the proper drainage of rain-water the roof was provided with water-spouts.

53. EKLAKHI MOSQUE, PANDUA, DISTRICT MALDA.—Decayed and salt-affected bricks of the walls were replaced and broad ornamental work reproduced where necessary.

54. QUTB-SHAHI-MASJID, PANDUA, DISTRICT MALDA.—The exposed wall-tops were made watertight and the damaged portion of the compound-wall repaired.

55. TOMB AND MOSQUE OF MURSHID QULI KHAN, KATRA, DISTRICT MURSHIDABAD.—In continuation of last year's work (1962-63, p. 84), the brickwork of the northern mosque-wall was rebuilt with specially manufactured bricks.

56. MOSQUE, KHERUR, DISTRICT MURSHIDABAD.—The exposed wall-tops were made watertight with brickwork in cement-mortar. A layer of fresh lime-concrete was laid over the leaky roof of the verandah.

MID-EASTERN

CIRCLE *Bihar*

57. EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—Brick drains were provided on three sides of Temple Site 2 for the proper drainage of rain-water from the area around. Approach-roads in lime-concrete were provided on the northern and eastern sides of Monastery Site 11 and Temple Site 2. The fallen portion of the northern wall of Temple Site 12 was repaired (pl. LIX). The damaged flooring of the north and west verandahs of Monastery Site 10 was repaired with lime-concrete. In addition to these, a platform was specially constructed for the sculptured stones, which were lying scattered, to be arranged on it.

58. BAKHTIYAR KHAN'S TOMB, CHAINPUR, DISTRICT SHAHABAD.—The cracks in the roof allowing seepage were repaired by grouting with liquid cement-mortar.

59. MUNDESVARI TEMPLE, RAMGARH, DISTRICT SHAHABAD.—The leaking *sikhara* of the temple was made watertight by grouting with liquid cement-mortar.

60. FORT, ROHTAS, DISTRICT SHAHABAD.—The damaged platform of the Shish-Mahal was repaired. The flooring of the Nachghar which had been in a bad state was replaced by a fresh layer of lime-concrete. The broken edges of the plaster were filleted.

61. EXCAVATED SITE, KUMRAHAR, DISTRICT PATNA.—For better preservation the fragments of the Mauryan pillar were, provided with a shed.

Uttar Pradesh

62. TOMB OF DAULAT, MAHANAGAR, DISTRICT AZAMGARH.—The main door at the entrance to the tomb was repaired. The undulating area around the tomb was levelled and dressed for the proper drainage of surface-water.

63. RAMABHAR STUPA, AMRUDHWA, DISTRICT DEORIA.—In order to preserve the *stupa* properly the work of clearing debris overlying it was taken up to find out the method of its construction. The work is in progress.

64. NIRVANA STUPA, KUSINAGARA, DISTRICT DEORIA.—Due to a rise of the level of sub-soil water, the infilling earth became moist and burst open the thin encasing wall of the Stupa, constructed in 1927, leading to its collapse (pl. LX A). After the clearance of the debris, the core of the earlier brick *stupa,* in mud-mortar, was taken up to make its surface watertight by the re-setting of the top courses in cement-mortar mixed with a waterproofing compound, to keep the moisture rising from below sealed up within the structure itself. On completion of this work (pl. LX B), still in progress, the *stupa* will be reconstructed *to* the shape it had prior to its fall.

65. EXCAVATED REMAINS, SARNATH, DISTRICT VARANASI.—Tops of the encasing walls of the votive *stupas* were made watertight by the re-laying of the top courses in good mortar. As stated above (p. 92), four Buddha-images were found in the core of a *stupa* (pl. LXI). Besides other works of maintenance of the ruins, the carved stone pieces lying within the area in possession of the State Forest Department were collected and stacked properly.

66. DHARARA MOSQUE, VARANASI.—The cracks in the roof of the mosque were repaired after grouting and the exposed surface of the dome was plastered.

NORTHERN CIRCLE

Madhya Pradesh

67. GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—The sculptured friezes embellishing the southern face of the *jagati* of the Lakshmana temple, covered in the past by part of the basement of the Matangesvara temple, were exposed. The damaged plinth of the Matangesvara temple was rebuilt with old stones and the open joints in the masonry of the platform were pointed.

Rajasthan

68. PALACES, DIG, DISTRICT BHARATPUR.—The dislodged wooden panels of the ceiling of the Gopal-Bhavan were re-set in position and the flooring of both the Kesava-Bhavan and Suraj-Bhavan was repaired with special lime-mortar. The fallen side-wall of the room at the north-eastern corner, near the eastern gate, was rebuilt.

Uttar Pradesh

69. FORT, AGRA.—The worn-out lime-concrete floor of the verandah externally surrounding the principal chamber of the Muthamman-Burj was replaced by marble pave ment in conformity with the original scheme.

70. HUMAYUN'S MOSQUE, AGRA.—The open joints in the brickwork of the mosque were filled, decayed and fallen patches of lime-concrete renewed and broken ends of plaster secured by edging.

71. I'TIMADU'D-DAULA'S TOMB, AGRA.—The fallen portion of the compound-wall on the south-eastern side was rebuilt and open joints in the brickwork facing the river were pointed.

72. RAMBAGH, AGRA.—The walls of the main entrance to the garden were plastered with *kankar-lime* and the side rooms were suitably reconditioned.

73. TAJ-MAHAL, AGRA.—The loose black marble bars in the veneering of the north west minar were re-set with special lime-mortar and the missing ones replaced. With a view to providing a suitable drainage in the lower platform, the sunken pavement to the south of the Mihmankhana, towards the riverside, was raised by the laying of lime-concrete underneath.

The western part of the compound wall of the Khan-i-'Alam garden and the southern wing of the Sidhi-Darwaja were carefully reconstructed. Other repairs included under-pinning of the brickwork, laying of fresh concrete over decayed portions and renewal of the roof-plaster over the principal entrance.

74. GROUP OF MONUMENTS, FATEHPUR-SIKRI, DISTRICT AGRA.—The overhanging portions of the rubble-masonry walls near the Diwan-i-'Am and the Sukha-Tal were underpinned. Open joints in the masonry of the drain in front of the Daftarkhana and of the walls adjoining the Hathi-Pol and Nagina-Masjid were filled. Fresh lime-concrete was laid on the floor of the small chambers of Faizi's house.

75. AKBAR'S TOMB, SIKANDARA, DISTRICT AGRA.—The cracks in the arches of the *dalans* on the northern side of the mausoleum, on the ground floor, were repaired by the fixing of reinforcement-bars in the spandrils and copper plates on either side of the key stones to strengthen the arches. The fallen and loose patches of lime-plaster inside the *dalans* were preserved by filleting. Wooden railings were provided above the topmost staircase, on three sides, in order to afford protection to the visitors.

76. MARYAM'S TOMB, SIKANDARA, DISTRICT AGRA.—The open joints of the stone-flagged roof were filled and the sunken portions of the roof-terrace raised for providing proper outlet to rain-water. The collapsed portions of the western compound-wall were re-built.

77. GOPESVARA TEMPLE, GOPESHWAR, DISTRICT CHAMOLI.—The loose stones on the western and south-western faces of the crumbling *prasada* of the temple were re-set, crack ed stones replaced by new ones, and the dowels and clamps of iron were replaced by those of copper. The huge *amalaka* and the wooden *chhattri* were rebuilt. For strengthening the masonry of the structure, cement-mortar was used in place of mud-mortar originally used.

78. RANI LAKSHMIBAI'S PALACE, JHANSI.—The modern constructions in the palace were demolished in order to preserve its original character and the missing door-leaves and frames were replaced.

79. RESIDENCY BUILDINGS, LUCKNOW.—The damaged portions of the compound-wall were repaired and the entire wall raised to a height of about 2 m.

NORTH-WESTERN CIRCLE

Delhi

80. 'ADILABAD FORT, DELHI.—A portion of the collapsed bastion of the citadel on the west was rebuilt. The accumulation of debris was cleared from the foot of the bastion,

81. ADHAM KHAN'S TOMB, DELHI.—The pulverized lime-concrete on the first floor roof of the main tomb was dismantled. The work of re-laying fresh concrete is in progress.

82. HAUZ-KHAS, DELHI.—The open joints in the masonry of the corridors of the Lohewala-Gumbad were grouted and pointed and the cavities were filled in.

83. JAMI'-MASJID, DELHI.—In continuation of the last year's work (1962-63, p. 87), some more decayed pieces of the carved red sandstones were taken out from the squinches of the main prayer-chamber and new slabs with designs were replaced. The decayed stone pieces of the marble *minar* were taken out from the southern gateway. The work of fixing new stones is in progress.

84. KASHMIRI GATE, DELHI.—Red sandstone *chaukhats* were provided to the door-openings of the inner cells adjoining the gate. The work of pointing and plastering the brickwork is in progress.

85. ARCHAEOLOGICAL AREA, QUTB, DELHI.—The northern gate of the Quwwatu'l-Islam mosque as extended by 'Alau'd-Din Khalji, remains of which had remained buried under debris, were exposed.

86. RED FORT, DELHI.—In continuation of the work done last year (1962-63, p.87), the replacement of the worn-out *dasa* red sandstone slabs of the Diwan-i-'Am was carried out.

87. SAT-PULLA, DELHI.—The open joints of the masonry were pointed. The decayed concrete of the roof was removed and a fresh layer of lime-cement concrete was laid.

88. JANTAR-MANTAR, NEW DELHI.—The decayed plaster of both the rooms of Jai-Prakash-yantra was removed and re-laid with fresh fime-cement-concrete. The structures were colour-washed,

89. MOSQUE OF MAKHDUM SAHIB, DELHI.—The work of pointing and grouting of open joints of marble masonry in the ceiling of the dome and in the walls was attended to.

90. PURANA-QILA, NEW DELHI.—Repairs to the main entrance-gate on the west by way of tidying the approaches, sunk-pointing to the open joints in the masonry of the walls and ceilings, providing new flooring to the platform, etc., were carried out after the unauthorized squatters inside the Qila had been got evicted by the Delhi Administration after a lapse of seventeen years. The work is in progress.

91. SIKANDAR LODI'S TOMB, NEW DELHI.—A portion of the marble wall and the stone flooring of the Bara-Gumbad were grouted and pointed.

Himachal Pradesh

92. MANI-MAHESA TEMPLE, BHARMAUR, DISTRICT CHAMBA.—The decayed wooden planks were taken out from the roof and were replaced by new ones. The loose flagstones of the flooring were fixed on a cement-concrete base.

93. SAKTI-DEVI TEMPLE, CHHATRAHRI, DISTRICT CHAMBA.—The work done here was of the same nature as at the preceding monument.

94. LAKSHMI-NARAYANA TEMPLE, CHAMBA.— A wooden *chhattri* was provided over the front projection of the *sikhara*. The wood-work was further preserved by the application of solignum as wood-preservative.

Panjab

95. MOSQUE AND LAT, HISSAR.—In continuation of the last year's work (1962-63, p. 87), dry-stone pitching was made in the ancient trench provided for the drainage of water.

96. FORT, KANGRA.—AS a result of the clearance of debris lying over the ancient flight of steps near the Ranjit Singh Gate, the original features of the gateway-complex were brought to light.

97. FORT, NURPUR, DISTRICT KANGRA.—The hollows and cracks in the walls of the principal gateway were pointed and grouted with liquid cement-mortar. A retaining-wall was provided towards the south of the ruined temples. Rank vegetation on the walls and bastions was cleared.

98. KATOCH PALACE, TIRA-SUJANPUR, DISTRICT KANGRA.—The holes, hollows and crevices in the walls of the Baradari were filled up and vegetation was removed.

Rajasthan

99. SHAHJAHANI MOSQUE, AJMER.—In continuation of the repairs already carried out during the last two years (1962-63, p. 88), the work of replacement of the broken and decayed marble veneer-slabs from the rear wall of the prayer-chamber was completed. The damaged and cracked pillars were also repaired.

100. AKBAR'S MOSQUE, AMBER, DISTRICT JAIPUR.—The decayed plaster from the outer walls of the dome was removed and the exposed surface was covered with fresh lime-cement plaster. The work of replacement of *chhajja* slabs over the *minor* is in progress.

101. EXCAVATED SITE, BAIRAT, DISTRICT JAIPUR.—The open joints in the excavated brick structures were grouted and pointed, besides necessary repairs to the masonry.

102. FORT, RANTHAMBHOR, DISTRICT SAWAI-MADHOPUR.—The decayed portion of the rubble-masonry floor was re-set in proper position.

SOUTH-EASTERN CIRCLE

Andhra Pradesh

103. MADHAVARAYASVAMI TEMPLE, GORANTLA, DISTRICT ANANTAPUR.—A dwarf compound-wall in masonry was erected; over it barbed-wire fencing was fixed.

104. FORT, GURRAMKONDA, DISTRICT CHITTOOR.—The leaky roof of the Mahal was made watertight.

105. PARASURAMA TEMPLE, ATHIRALA, DISTRICT CUDDAPAH.—The area around the temple was levelled with the necessary gradient, and ancient drains were cleaned for proper drainage.

106. FORT, SIDDHAVATTAM, DISTRICT CUDDAPAH.—The irregular portions of the fort-wall at the western entrance were raised to a uniform level. The north-east and north west bastions were repaired by the underpinning of the unsupported brickwork and recess-pointing to open joints wherever necessary. The missing wood-work of the entrance-arches was restored. Turnstile gates were provided at the eastern and western ends. The *mandapas* were floored with gravel.

107. MEDIEVAL TEMPLES, NAGARJUNAKONDA, DISTRICT GUNTUR.—The work of removal of debris, clearance of jungle-growth and levelling up of the surrounding ground was undertaken to improve the appearance of the area.

108. RECONSTRUCTED MONUMENTS, NAGARJUNAKONDA, DISTRICT GUNTUR.—The disturbed bricks of the monuments were re-set. For the effective flow of rain-water from the different sites, drains were provided. Approaches were trimmed up by dressing and spreading gravel over the surface.

109. FORT, GOLKONDA, DISTRICT HYDERABAD.—The open joints in the forti fication-walls were recess-pointed with combination-mortar and the exposed wall-tops were made watertight by the re-setting of the top layers in good mortar. General main tenance by way of removal of vegetation and debris was also attended to.

110. AKKANNA-MADANNA CAVES, VIJAYAWADA, DISTRICT KRISHNA.—Barbed-wire fencing was erected on the southern and northern sides of the area to prevent entry of cattle into the caves. The drain in front of the caves was realigned and diverted to the courtyard for the effective discharge of rain-water effectively.

111. NAVA-BRAHMA TEMPLES, ALAMPUR, DISTRICT MAHBUBNAGAR.—The roof of the *garbha-griha* of the Padma-Brahma temple was made watertight with brick-jelly concrete. The exterior surface of the walls and the flooring of the exposed *pradakshina-patha* including the apron were all made damp-proof by recessed cement-pointing.

112. PAPANASI GROUP OF TEMPLES, ALAMPUR, DISTRICT MAHABUBNAGAR.—The roofs of the shrines were made watertight by a course of fresh brick-jelly concrete. A dilapidated small temple to the south of the main shrine was reconstructed carefully with the old material. The missing portions of the temple at the extreme north were restored to a level following the ancient clues of construction. The construction of a retaining-wall to the west of the protected area is in progress.

113. SOMESVARA TEMPLE, MUKHALINGAM, DISTRICT SRIKAKULAM.—To retain the fiUed-up earth all round the temple, random-rubble retaining-walls were erected along the periphery of the monument.

114. THOUSAND-PILLARED TEMPLE, HANAMKONDA, DISTRICT WARANGAL.—The leaky roof was made watertight by a layer of fresh brick-jelly concrete in lime over a prepared base of masonry for a proper slope for drainage. Stone water-spouts were provided at places where they were missing.

Madhya Pradesh

115. GANESA STATUES, BARSOOR, DISTRICT BASTAR.—The two large images of of Ganesa were protected from weathering by a reinforced cement-concrete shed. The uneven flooring of the platform was restored to the proper shape.

116. MAMABHANJAKA TEMPLE, BARSOOR, DISTRICT BASTAR.—-The disturbed and irregular stones of the flooring of the *mandapa* were removed and refixed properly by grouting and pointing with cement-mortar.

117. PATALESVARA TEMPLE, MALHAR, DISTRICT BILASPUR.—The caned plinth of the main temple was exposed to view by the removal of debris. The loose stones scattered in and around the compound were removed and the area properly levelled. The huge upright sculptures near the temple are being provided with a reinforced cement-concrete shed.

118. MAHADEVA TEMPLE, PALI, DISTRICT BILASPUR.—The cracks in the masonry of the *mukha-mandapa* were grouted and pointed and the entire roof replastered with combination-mortar. The gaping crevices in the corbelling courses of the cut stones were filled up. Shutters were fixed with expanded metal to the openings to ward off bat nuisance.

Maharashtra

119. FORT-WALL, BHANDAK, DISTRICT CHANDA.—The fallen walls of the inner and outer fortification-walls were re-set with random-rubble masonry in lime-mortar, and the exposed top was made watertight.

120. RANI-MAHAL, BILLARPUR, DISTRICT CHANDA.—The accumulation of earth and debris was cleared to expose the terrace of the palace. The work is in progress.

121. GROUP OF TEMPLES, MARKANDA, DISTRICT CHANDA.—The missing portions of the compound-wall were restored and the open joints in other parts recess-pointed. The work is in progress.

122. MAHADEVA TEMPLE, NERI, DISTRICT CHANDA.—The *sikhara* was cleared of the accumulated loose earth and spongy mortar and made watertight. Expanded metal was fixed to the angle-iron shutters to prevent entry of bats.

SOUTHERN CIRCLE

Kerala

123. MATTANCHERRY PALACE, COCHIN, DISTRICT ERNAKULAM.—A course of granite slabs in half of the width of the porous laterite walls was introduced to serve as a damp-proof course for protecting the paintings on the walls.

124. FORT, PALGHAT.—The roof of the magazine was completed and made water tight.

125. TENKAILASANATHA TEMPLE, TRICHUR.—A circular teakwood frame with perspex sheets on top and galvanized iron sheets at the bottom was erected around the sanctum of the Sankaranarayana shrine thus affording necessary protection to the wall-paintings.

126. FORT, ANJENGO, DISTRICT TRIVANDRUM.—The exposed tops of the fort-walls were underpinned wherever necessary and made watertight.

Madras

127. GROUP OF MONUMENTS, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The later walls and the roofing-slabs adjoining the Vishnu shrine in the Shore temple were removed so as to expose the original features. This has also allowed the entry

of natural light into the Vishnu shrine. The cracks in the side-walls of the Shore temple were grouted, and the uneven stone flooring on the southern side was re-set. Besides the grouting of the cracks and filling up of the fissures on the surface of the rock-cut caves, popularly known as the Five Rathas, a drain was also provided in the compound for easy drainage of rain-water.

128. SIVA TEMPLE, AVINASI, DISTRICT COIMBATORE.—The dislodged stone flooring in front of the Vinayaka shrine was re-set and the open joints recess-pointed. The cracked lintel in the *mandapa* is being replaced.

129. **SUGRIVESVARA TEMPLE, SIRCARPERIAPALAYAM, DISTRICT COIMBATORE.—The** dead plaster from the terrace was raked out, and a coat of fresh plaster was provided. The temple courtyard was excavated and a proper slope was given for drainage. The fallen enclosure-wall was reconstructed according to the original.

130. **MURUGANATHA TEMPLE, TIRUMURUGANPUNDI, DISTRICT COIMBATORE.-—The** terrace of the *entrance-mandapa* was made watertight by a layer of brick-jelly concrete and two layers of flat tiles set in cement-mortar.

131. ROCK-FORT, PALLAPATTY, DISTRICT MADURAI.—The existing narrow and slippery rock-cut steps to the temple were reconditioned and widened for the convenience of the visitors. Rock-cut drains were also provided for proper drainage of rain-water.

132. KARUPPANNASWAMI ROCK WITH JAINA IMAGES, UTTAMAPALAYAM, DISTRICT MADURAI.—The water-cistern at the top was completely closed to prevent water from dripping over the sculptures and inscriptions. Two more cut-stone pillars were provided to support the roof of the *mandapa* and the roof was rendered watertight.

133. HORSE-STABLES, GINGEE, DISTRICT SOUTH ARCOT.—The spongy terracing of the roof was made watertight by two layers of flat tiles and by the plastering of the top with lime-mortar.

134. KALYANA-MAHAL, GINGEE, DISTRICT SOUTH ARCOT.—The decayed plaster on the walls of the front corridor of the Kalyana-Mahal was raked out and the exposed surface was covered with a priming coat of plaster with combination-mortar.

135. IRAVATESVARA TEMPLE, DARASURAM, DISTRICT THANJAVUR.—The leaky terrace of the main *mandapa* was made watertight.

136. BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT THANJAVUR.—The damaged flooring in the first floor of the main *gqpuram* was repaired with combination-mortar.

137. BRIHADISVARA TEMPLE, THANJAVUR.—Shutters fitted with expanded metal were provided to the door-frames in the guard-rooms at the front terrace to prevent entry of bats. The existing ceiling in those rooms were completely repaired.

138. SQUARTZ CHURCH, THANJAVUR.—A portion of the cracked compound-wall of the church was reconstructed with brick in lime-mortar and plastered with cement-mortar.

139. ROCK-CUT VISHNU TEMPLE, TIRUMAYAM, DISTRICT TIRUCHCHIRAPPALLI—Repairs to the main *gopuram* by way of pointing the open joints in brickwork with lime-mortar and under pinning of the overhanging portions of the masonry were carried out.

The missing portions of the masonry in the third and fourth tiers of the *gopuram* were rebuilt with special bricks for structural stability.

140. BHAKTAVATSALA TEMPLE, SHERMADEVI, DISTRICT TIRUNELVELI.—The later windows in the *vimana* at the entrance were removed and the gaps closed to match with the adjacent area. Repairs to the *vimana* by way of edging the broken ends of plaster and plastering the exposed surfaces were carried out.

141. ROCK-CUT CAVE-TEMPLE, TIRUMALAIPURAM, DISTRICT TIRUNELVELI.—A surface-drain was cut in the rock to divert the rain-water on either side of the cave. The approach-road was widened.

Mysore

142. TIPU SULTAN'S PALACE, BANGALORE.—The decayed wooden joists and the plankings of the terrace of the main Durbar hall were replaced by new ones in teakwood. Over the teakwood planks were laid the terrace consisting of two layers of bricks-on-edge, 22-cm. thick layer of brick-jelly concrete in lime covered by two layers of flat tiles and finally finished with plastering in suitably-coloured combination-mortar. The damaged ceiling was also restored with new ceiling-planks. The old painted wooden cornice at the end of the beam and the ceiling-planks, including the beadings, was replaced according to the available clues of construction. The painted planks in the ceiling were retained in their original places as far as practicable. One damaged wooden ornamental pillar in the main hall was replaced by a pillar cast *in situ* in reinforced cement-concrete and encased in wood, carved in accordiance with the original design. The fallen portions of the ornamental parapet-wall were reconstructed following the original line of construction. The work is in progress.

143. ANANTASAYANA TEMPLE, ANANTASAYANAGUDI, DISTRICT BELLARY.—The terrace was opened up in order to replace the cracked massive stone beams in the *mandapa* of this famous temple by new ones. The work is in progress.

144. KALLESVARASVAMI TEMPLE, BAGALI, DISTRICT BELLARY.—AS a preliminary towards major repairs to this highly-ornate Chalukyan temple, jungle-growth and debris were removed.

145. GROUP OF MONUMENTS, HAMPI, DISTRICT BELLARY.—The stone *mandapa* near the Krishna temple had been in a dilapidated condition with its capitals and beams damaged. It was partially dismantled for reconstruction. The work is in progress.

146. TIPU SULTAN'S UPPER FORT AND CITADEL, BELLARY.—Portions of the parapet-wall with open joints were made watertight. The breaches in the walls of the Mahabal situated within the fort were filled up.

147. ASOKAN INSCRIPTIONS, SIDDAPURA, DISTRICT BELLARY.—The roof of the pavilion built over the inscriptions was made watertight.

148. NAMBI-NARAYANA TEMPLE, TONNUR, DISTRICT MANDYA.—The top of the *garbha-griha* and *sukhanasi* was made watertight. The fallen wall of the temple on the inner side is being rebuilt. The accretions inside the *mukha-mandapa* and the *maha-mandapa* were cleared and arrangements were made to make the top of these two units of the temple watertight.

SOUTH-WESTERN CIRCLE

Goa

149. MONUMENTS, GOA VELHA.—The preliminary preparation for the works at the ancient churches at Goa Velha was completed. The work of clearance of debris at the Church of St. Augustine was started; the work is in progress. The entire roof of the nave of Se Cathedral, which had been in a deteriorated condition, was dismantled and a start was made to re-lay Mangalore tiles on the roof after making top of the vault and surfaces of the walls watertight. The work is in progress.

Maharashtra

150. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—After the completion of the work of reconditioning the masonry pillars in cement-concrete up to Cave 8, work of the same nature was taken up in Caves 7, 5 and 1.

151. BIBI-KA-MAQBARA, AURANGABAD.—After the completion of the plastering of the exposed surface of the north-east *minar,* the north-west *minar* was taken up for similar treatment and the work was completed. Reviving the garden attached to the Bibi-ka-Maqbara was also completed.

152. FORT, DAULATABAD, DISTRICT AURANGABAD.—The masonry platforms constructed in the past in the compound of the Jaina temple, exposed recently, was removed to clear up the compound. A number of carved pieces, consisting of capitals and bases of pillars, sculptures, etc., were found during the clearance. Some of the important pieces were collected, sorted out and arranged in the open air.

The debris on the north side of the Jaina temple was also removed to clear the area. While the removal of the debris, an underground cell was noticed.

153. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—For the easy flow of rain-water, a rock-cut drain was provided on the top of Caves 11 and 12. The work of reconditioning the pillars in reinforced cement-concerete in Cave 14 was taken up and is in progress. The masonry pillar-supports in front of Gaja-Lakshmi in Cave 16 (Kailasa) were dismantled, and to support the cracked rock at the top iron girders were inserted in the rock on one side. Similar work on the other side is in progress. The cracks appearing in the row of standing elephants were filled up on the north side. This work is also in progress. Removal of debris accumulating on the south of Cave 16 was taken up to make easy approach for the visitors from Cave 15. While the debris was being removed, ruins of an old brick structure of the medieval period were exposed. The work is in progress.

154. ELEPHANTA CAVES, GHARAPURI, DISTRICT KOLABA.—The work of replacing the masonry pillars, constructed in the past, with those in reinforced cement-concrete was kept in progress. In order to stop leakage in the roof, the zones around the leaking points are being grouted from below the ceiling after drilling holes with the help of a rotary drilling-machine. With the spread of grout along the seams in the rock, leakage has decreased. The work is in progress.

Mysore

155. GOL-GUMBAD, BUAPUR.—The old gateway housing a museum, recently taken over by the Survey, required repairs in the interior to suit the purpose. In order

to enable this Survey to keep the museum open while the repairs were in progress, the first floor of the building was taken up first for repairs such as providing welded-mesh doors, fixing welded-mesh in the openings, removing the decayed concrete from the roof, providing a layer of fresh concrete, etc. The work is in progress.

WESTERN CIRCLE

Gujarat

156. EXCAVATED REMAINS, LOTHAL, DISTRICT AHMADABAD.—To protect the exposed ruins from erosion by surface-water, open drains and hume-pipes were provided at suitable places for proper drainage. For the protection of the platform on which the 'kiln' stands, the side-slopes were provided with dry pitching in burnt bricks and covered with earth. The top surface of the entire mound was also suitably levelled and dressed in relation to the excavated structures. Remaining portions of mud-brick structures in Streets 4 and 5 were suitably conserved, with specially-manufactured bricks, and the entire site was enclosed within a barbed-wire fencing.

157. MOSQUE, SARKHEJ, DISTRICT AHMADABAD.—The uneven and cracked terraced roof of the mosque was found laid over the old terraced roof full of cracks. In order to stop leakage and to reduce the super incumbent load, the extra layer of concrete was removed together with the old concrete. A layer of new concrete was re-laid after grouting the cracks and making good the loose masonry underneath. The work is in progress.

158. QUEEN'S TOMB, SARKHEJ, DISTRICT AHMADABAD.—The cracked portion of the high wall on the north-east corner of the tomb facing the tank had been out of plumb due to roots of trees penetrating deep into the masonry. The stones of this portion of the wall together with the dome, lintels and capitals were dismantled after the extraction of roots. A part of the decayed flooring of the hall in front of the tomb was redone with new and old stones. The work is in progress.

159. TANK, SARKHEJ, DISTRICT AHMADABAD.—The clearance of debris from all round the protection-wall brought to light many structures which had lain buried. Jungle and trees growing on the protection-wall were cut and the roots were killed with a chemical solution. An undermined part of the wall on the east side was suitably underpinned.

160. TOMB OF SHAIKH AHMAD KHATA GANJ BAKSH, SARKHEJ, DISTRICT AHMADABAD.—The cracks on the terraced roof of the tomb were opened up and sealed with concreted mortar to match with the adjoining area after thorough grouting. The work is in progress.

161. MANSAR TANK, VIRAMGAM, DISTRICT AHMADABAD.—The dislodged portion of the roof of the *sabha-mandapa* (pl. LXII), between the twin shrine called Sas temple, was carefully taken down after the numbering of the members, the settled portion below the ground-level was brought to the original level and the members were replaced. Only the most shaken part of the *sabha-mandapa* was repaired (pl. LXIII) so as to merge with the other half which was structurally sound.

162. HIRA GATE, DABHOI, DISTRICT BARODA.—Stones in the northern enclosure-wall of the gate, which was in a dilapidated condition, were taken down carefully and the wall was reconstructed to the original height. A few sculptured pieces of stones, used in repairs earlier, were salvaged.

163. DARBAROARH, SIHOR, DISTRICT BHAUNAGAR.—The roof of the Darbargarh containing paintings on the walls of the room on the top floor which had been leaking badly was redone with new Mangalore tiles to prevent damage to the paintings.

164. JAMI'-MASJID, CAMBAY, DISTRICT KAIRA.—Sixteen exfoliated and cracked pillars of the mosque, including three from the main prayer-hall, were replaced with new ones (pl. LXIV). The work was of special interest, since no dismantling of adjacent parts was resorted to. The monument was provided with a lightning-conductor.

165. BHAMARIA WELL, MEHAMDABAD, DISTRICT KAIRA.—Plants and trees growing on the structure were cut and their roots killed with a tree-killer solution. The under mined portion of the wall was underpinned. Shutters with expanded-metal *jali* were provided to some of the openings for the safety of visitors.

166. RANI-KA-VAV, PATAN, DISTRICT MEHSANA.—The debris accumulating in the passage leading to the shaft of the well was removed, exposing a part of the two side-walls which had so long remained concealed.

167. SAHASRALINGA TANK, PATAN, DISTRICT MEHSANA.—The unpitched portion of the channel connecting the temple-basement in the tank was provided with dry-brick pitching, and the surface was plastered to check further erosion.

168. OLD ENGLISH AND DUTCH TOMBS, SURAT.—A portion of the breached com pound-wall was reconstructed.

169. DARBARGARH, HALWAD, DISTRICT SURENDRANAGAR.—Big trees growing on high walls of the Darbargarh were cut and the roots were destroyed by injecting a chemical solution. Jungle growing in the courtyard was also cleared. The carved wooden staircase of the central tower was treated with solignum, a wood-preservative, to arrest further decay.

Rajasthan

170. GROUP OF MONUMENTS, FORT, CHITORGARH.—D6bris was removed from the area on the main road to Fateh Prakash palace, called Moti-Bazar, Interesting struc tures comprising suites of shops on either flank, as also underground cells, came to light.

Debris accumulated in the area near Mira-Mahal in the Rana Kumbha's palace-complex was cleared, exposing a gate at the corner near Genda House. Traces of a compound-wall on the southern side of the palace were found.

The extant portion at the top of the gate-building of the house of Ala-Kabra was suitably repaired by the plugging in of the overhanging vault from below. The terraced roof of the gate was made watertight by providing a fresh layer of lime-concrete mixed with cement. The exposed tops of the walls were also made watertight.

The bulged portion of the wall of the second gate near Suraj-Pol was taken down carefully and rebuilt after the extraction of roots of trees. The top of the gate-building was made watertight.

The tops of the structures, including that of the two cabins of the house of Gora and Badal, were made watertight. The area around the monument was cleared of vegetation and debris.

Huge quantities of debris lying round the monument and the two towers called Ranga-Rasia-ki-Chhatri were removed and scatterd stones were cleared. The overhanging portions of the two towers were underpinned. The staircase of the towers

which had got detached were anchored with the adjacent walls. Tops of the structures around the towers were made watertight.

The fallen portions of the wall of the Ghee Tank (pl. LXV), in the north-cast corner, were restored.

The vaulted roof of the jail in the palace of Ratan Singh had developed a dangerous crack at the apex separating it from the terraced roof and caused depression in the roof. The crack was suitably plugged in from inside after the provision of a proper support, the terraced roof was opened from the top and the cavities were filled in with rubble-masonry packing. The top of the entire roof was made watertight with a layer of fresh lime-concrete mixed with cement and toned to match with the adjoining surface. The missing portion of the balcony of the Zanana-Mahal of the palace was restored in accordance with the original.

The disturbed stones of the *sikhara* of the Siva temple near Gomukh were taken down and refixed at their original places. A few old stones lying at the site within the debris were also used in the work.

171. SUHAVASVARA TEMPLE, MENAL, DISTRICT CHITORGARH.—The dislodged stones on the roof of the *sabha-mandapa* were taken down and re-set at their original places. The roof was made thoroughly watertight.

172. BAHU TEMPLE, NAGDA, DISTRICT UDAIPUR.—The top of the *sabha-mandapa* of the temple was repaired with chiselled and moulded bricks in accordance with the original.

MONUMENTS MAINTAINED BY STATES

ANDHRA PRADESH

The following monuments received attention :

1. RAMA'S TEMPLE, PEDDA-TUMBLAM.
2. TUGHLUQ MOSQUE, BODHAN.
3. ANCIENT TEMPLE, DICHPALLI.
4. SHEHRE-BATEL KAMAN, HYDERABAD.
5. ANCIENT MOSQUE, RAJAHMUNDRY.

GUJARAT

The following monuments received attention :

6. OLD TEMPLE, VISAVODAR.
7. OLD STEP-WELL, MODHERA.
8. JAINA TEMPLE, MIYANI.
9. SIVA TEMPLE, POLO (pi. LVI).
10. RANMOL-CHOKI, IDAR.
11. JAMI'-MASJID, UPARKOT.

KERALA

12. PADMANABHAPURAM PALACE, THUCKALAY, DISTRICT KANNIYAKUMARI.—The walls of the Uppirika-Malika, which carry mural paintings, were provided with copper sheets to prevent moisture from affecting the paintings. The floor of the main palace was plastered.

MYSORE

13. TAJ-BAVDI, BIJAPUR.—The collapsed portions of the parapet-wall around the narrow passage inside the pond were reconstructed and the joints in the masonry of the side-walls pointed.

14. RANGAYYANA-BAGILU, CHITRADURGA.—The roof was made watertight and the decayed wooden windows were replaced and painted.

15. RAMESVARA TEMPLE, BALAMBID, DISTRICT DHARWAR.—Fresh concrete was laid on the roof of the temple, which was also made watertight. The courtyard around was neatly dressed and barbed-wire fencing provided.

16. GUMAT ON SEDAM ROAD, GULBARGA.—The old and deteriorated plaster of the walls was removed and the exposed surface replastered. Repairs to the leaky dome has been taken up. The work is in progress.

ORISSA

17. LAKSHMANESVARA TEMPLE, BHUBANESWAR.—The conservation of the Lakshmanesvara temple belonging to the group of three ancient dilapidated Siva temples near the Ramesvar temple was taken up and completed.

RAJASTHAN

18. AKBAR'S FORT, AJMER.—Apart from the annual repairs and maintenance, special attention was paid to repairing the roof of the central building of Akbar's fort, which contains the museum. All the cracks were filled with *lime-surkhi* mortar and the surface finished properly in order to prevent the rain-water from percolating through these crevices and damaging the building.

The following monuments also received attention :

19. PALACES AT AMBER, DISTRICT JAIPUR.

20. ASTRONOMICAL OBSERVATORY, JAIPUR.

21. DEVALS, MANDORE, DISTRICT JODHPUR.

22. MUCHKUND TANK, DHOLPUR.

23. AMBAMATA TEMPLE, JAGAT, DISTRICT UDAIPUR.

24. MONUMENT, ISWAL, DISTRICT UDAIPUR.

25. SUN TEMPLE, VARMAN, DISTRICT SIROHI.

ARCHAEOLOGICAL CHEMISTRY

TREATMENT OF MONUMENTS AND PAINTINGS

ANDHRA PRADESH

1. SCULPTURES IN ARCHAEOLOGICAL MUSEUM, NAGARJUNAKONDA, DISTRICT GUNTUR.—Fifty-six loose sculptures were cleaned and preserved.

ASSAM

2. VISHNUDOL, JAYSAGAR, DISTRICT SIBSAGAR.—Arrangements for initiating chemical treatment of the terracotta plagues on the outer surface of the temple were completed. Situated in a region with very heavy rainfall, the temple is covered with a thick layer of moss and lichen which conceals the skilful workmanship. Chemical work was commenced.

BIHAR

3. **ASOKAN PILLARS, LAURIYA-ARARAJ AND LAURIYA-NANDANGARH, DISTRICT** CHAMPARAN.—The Asokan pillars were thoroughly examined for any indication of renewed tendency to flaking of the stone. The pillar at Lauriya-Araraj was found to be requiring further chemical treatment for the elimination of soluble salts and preservation of the inscription. The work is being taken up.

4. FORT, ROHTAS, DISTRICT SHAHABAD.—As a prelude to the chemical treatment of the paintings, drawings of the paintings in this monument were prepared to record the extent of the damage.

DELHI

5. DIWAN-I-KHAS, RED FORT, DELHI.—Almost half the work of chemical treat ment of the golden paintings was completed. The work entered a delicate phase since each tiny bit of loosened fabric had to be refixed to the ceiling, and this was to be followed by the fixing of the colours before actual cleaning could be undertaken. Overlying accre tions and cobwebs were successfully removed with solvents and emulsifiers.

KERALA

6. MATTANCHERI PALACE, MATTANCHERI, COCHIN.—The paintings in all the rooms were taken up for chemical treatment. The old preservative coat was first removed with a mixture of acetone and toluene. The paintings were again chemically cleaned for better results and a fresh preservative applied. On the ground floor, the paintings in Room 4, which had developed some bulging because of saline action, were set right.

MADHYA PRADESH

7. TOMBS OF SHAH NAWAZ AND SHAH SHUJA, BURHANPUR.—Chemical treatment of wall-paintings in the two tombs was completed. The paintings had to be treated for the removal of dust, smoke and greasy deposits. For red pigments restrainers had to be

employed to prevent the running of the colour. The paintings have now emerged with pleasing details of colour and design. Drawings of the paintings were prepared for record.

8. LAKSHMANA TEMPLE, KHAJURAHO, DISTRICT CHHATARPUR.—Removal of vegetational growth and other agents disfiguring the temple continued on the main temple and on the subsidiary shrines. The problem of the removal of limewash from large areas on the stone surfaces proved much more difficult than had been envisaged on account of the campactness of the wash. Several chemicals besides hydrochloric acid were tried. The results were very satisfactory. The work is in progress. A large part of the temple was given fungicidal treatment and preserved.

9. ROCK-CUT CAVES, BAGH, DISTRICT DHAR.—Almost the entire painted surface was brought under elaborate chemical treatment by the close of the year. Removal of sooty accretions from baked and blistered pigment-surfaces in the caves presented many problems which were generally tackled successfully and the painted remains were cleaned and preserved. In some areas the underlying paintings did not show well even after the removal of accretions on account of their having been damaged by heat. Insects burrowing into the plaster were also exterminated by the injection of formaldehyde in their holes.

10. MONUMENTS, FORT, GWALIOR.—The lofty temple Teli-ka-Mandir was brought under elaborate chemical treatment for the removal of vegetational growth and lime from the sculptured surfaces. The work is in progress. Photogrphs of the stonework of other monuments were prepared with a view to recording the present condition as a preliminary measure to taking up their chemical treatment and preservation.

11. MAN-MANDIR PALACE, GWALIOR.—Drawings of paintings on the walls of this monument were prepared with a view to maintaining record of the condition of the pain tings.

MADRAS

12. KAILASANATHA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The highly-weathered stonework and sculptures of this temple were taken up for chemical treatment. Moss and lichen covering the other faces of the *vimana* and the sculptures on them were removed and a coat of fungicidal chemicals applied. The work is in progress.

13. SHORE TEMPLE, MAHABALIPURAM, DISTRICT CHINGLEPUT.—Of the two Somaskanda panels on the east and west of this temple, affected by saline action, the one on the eastern side facing the sea, which had been in a worse condition, was treated with paper-pulp for the removal of soluble salts.

14. BRIHADISVARA TEMPLE, THANJAVUR.—The inscriptions on the walls around the main temple, covered with moss, lichen and other algae, whitewash and red ochre, were cleaned with chemicals like ammonia, teepol and acetic acid. A coat of fungicidal preparation was also applied. The extant paintings in Chambers 10,11, 12,13,14 and 15 were cleaned and preserved. The old preservative coat was removed and the paintings were subjected to further cleaning for obtaining better results. A fresh preservative coat was later applied. The broken edges of the painted surface were also filleted,

15. BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHIRAPPALLI.—The epigraphical records on the outer face of the main temple, covered with moss and lichen, were cleaned and the stone preserved against exfoliation. The work is in progress.

MAHARASHTRA

16. ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—The paintings in Cave 16 were chemically cleaned of all accumulations like dust, dirt, oil, etc. by the use of various organic solvents. Similar work is in progress in Cave 17. Broken edges of the painted plaster were filleted with suitably-tinted plaster of Paris.

17. ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—The loose films of the paintings and the broken edges of the painted plaster on the ceiling of the north and the western corridors of the *mandapa* of Cave 32 were fixed and filleted. The paintings on the east wall of Cave 33 were chemically cleaned and preserved. The work has been extended to the ceiling of the verandah.

18. SIVA TEMPLE, AMBARNATH, DISTRICT THANA.—The outer surface of the stone temple had weathered much because of saline action. In order to arrest further decay paper-pulp was applied to remove salts. Moss and lichen were also removed from the stone surface. A coat of preservative is being applied on the treated surface.

MYSORE

19. PAPANATHA TEMPLE, PATADKAL, DISTRICT BIJAPUR.—The work of eradication of moss, lichen and salts from the surfaces of the temple was completed and the stone treated with a preservative.

20. DARIA-DAULAT-BAGH, SERINGAPATAM, DISTRICT MANDYA.—Paintings on the walls and ceilings of the rooms at the south-west enclosure in the ground floor were cleaned. The floral border-designs were cleaned with chemicals like morpholine, cellosolve, butyl alcohol and a few drops of ammonia and butyl lactate. The white background of the border-designs has come out in its original brilliance. Similarly, the paintings in the north-east enclosure arc being cleaned. The loose paint-films are being fixed to the surface and the broken edges suitably filleted.

ORISSA

21. BRAHMESVARA TEMPLE, BHUBANESWAR, DISTRICT PURL—The work on the top of the *vimana* was taken up. The *amalaka* and some sculptures (pl. LXVII) were completely freed of moss and lichen. The work will continue.

22. LINGARAJA TEMPLE, BHUBANESWAR, DISTRICT PURL—Removal of the compact and tough growth of moss and lichen on the *bhoga-mandapa* and *nata-mandira* of the temple was continued. Extraction of soluble salts from the decayed sculptures is now in progress. The growth of vegetation on the top and walls of the *jagamohana* was chemically cleaned and the temple was treated with fungicides and preserved.

23. MUKTESVARA TEMPLE, BHUBANESWAR, DISTRICT PURL—The attached *torana* and the *vimana* of the temple were subjected to localized chemical cleaning where vegetation had appeared on account of seepage of water.

24. PARASURAMESVARA TEMPLE, BHUBANESWAR, DISTRICT PURL-—The temple was subjected to elaborate chemical treatment for the removal of vegetational growth and lime-wash from the outer faces of the *vimana* and other parts. A complete removal of un seemly spots, which appear to be of ferruginous origin, from some of the sculptures has posed a problem, since the use of stronger chemicals is likely to be harmful to the cementing-material of the stone-grains.

24. RAJARANI TEMPLE, BHUBANESWAR, DISTRICT PURL—Chemical treatment of the stones of the temple was continued (1962-63. p. 102). The stones of different varieties, tints and textures used on this temple responded differently to the fungicides and presser-vatives. Paraffin-wax used on some of the stones has not prevented the recurrence of growth, whereas its use on stones of other tints and textures has been successful. Extensive trials with various chemicals to stop the re-appearance of dark patches of vegetation over large areas are being conducted. It is proposed to complete the current phase of the work next year.

25. SUN TEMPLE, KONARAK, DISTRICT PURL—Almost the entire exterior of the Mayadevi temple was chemically cleaned and a major portion was finally preserved with resins. Clay suspensions and emulsions of various tints were used on the surface of the cleaned sculptures to assess their utility in minimizing the effects of blasting by wind-borne sand. The sculptures are under continued observations. Work on the interior is to be undertaken. Paper-pulp treatment for drawing out salts from the sculptures was employed on a large scale.

The chemical treatment of the upper region of the *mastaka* of the main temple was commenced (pl. LXVIII A). The stones have suffered intensive deterioration on account of atmospheric conditions due to the location of the monument on the sea-coast. The vegetational growth has, however, been successfully eliminated from the surface of the fragile stones. It is proposed to employ resin-emulsions for preservation ana also to use for trials silicon water-repellants at the final stage in the process of treatment. Extensive paper-pulp treatment for elimination of soluble salts from the sculptures is being carried out. The work will be extended to the other parts of the temple.

27. ROCK-CUT CAVES, UDAYAGIRI AND KHANDAGIRI, DISTRICT PURL—Some colour-patches of indeterminate shapes were chemically cleaned of overlying accretion and preserved. Chemical treatment of sculptures, including bracket-figures and other carved panels, was continued, (1961-62, p. 102).

PANJAB

28. BRAJRAJ-BIHARI TEMPLE, NURPUR, DISTRICT KANGRA .—Drawings and photo graphs of the paintings in this monument were prepared with a view to maintaining record of their condition before actual treatment was taken in hand.

RAJASTHAN

29. PUNDARIK-JIKI-HAVELI, BRAHMAPURI, AND TEMPLE, GALTAJI, DISTRICT JAIPUR.—Drawings of the paintings in the monuments were prepared with a view to maintaining record of their condition before the chemical treatment.

UTTAR PRADESH

30. CHINI-KA-RAUZA, AGRA.—The extensive paintings on the high walls and the intrados of the monument remained under chemical treatment. With the help of a high scaffolding, built to reach the top of the dome, work on the higher levels was completed. Bright colours, especially blue and gold, and beautiful floral patterns were uncovered after the removal of varnish, dust, soot and cobwebs from the surface of the painted layer with the help of a number of organic solvents and emulsifiers. The work is in progress.

31. 'ABU'L FAZL AND FAIZI'S HOUSES, FATEHPUR-SIKRI, DISTRICT AGRA.—Paintings on the ceiling of this monument, which were affected due to extensive flaking of the plaster and paints, were taken up for complete chemical treatment. The layer of plaster that had been breaking loose from the carrier was refixed with the help of plaster of Paris, and damaged edges and cracks were suitably filleted. The painted surface was cleaned of varnish, dust and sooty accretion followed by consolidation of the pulverized pigments. The paintings are now in proper state of preservation and are well fixed to the carrier.

32. GROUP OF TEMPLES BAIJNATH, DISTRICT ALMORA.—A group of small temples in this hilly region, hitherto untreated, was taken up for the eradication of age-old accretion and vegetation and for the removal of limewash from the stones through the use of ammonia. Much of the work has been completed (pl. LXVIII B). The stone of these temples is to some extent pulverized on the surface on account of freezing of water held in the pores which would be consolidated with the help of suitable resinous compositions to minimize flaking.

WEST BENGAL

33. SIDDHESVARA TEMPLE, BAHULARA, DISTRICT BANKURA.—Chemical preservation of the fine mouldings of the temple executed in terracotta and lime-plaster over the exterior of the structure was completed. Thick vegetation including grass found covering the entire exterior was cleared and the structure preserved.

34. SYAMA-RAI TEMPLE, VISHNUPUR, DISTRICT BANKURA.—Chemical treatment of the terracotta plaques decorating the entire exterior of this brick temple of the Bengal school was continued. The plaques on the exterior surface had been covered with a thick layer of moss and lichen, and those in the interior completely hidden under a layer of dense soot. The use of various emulsifying agents like triethanalamine and lissapol led to the uncovering of these highly ornate plaques to full view. Vegetational growth was also eradicated and the plaques were treated with fungicides and preserved.

GEOCHRONOLOGICAL STUDIES

The laboratory-work on the specimens of laterite from Bhubaneswar, Mirzapur and Nellore was completed and a detailed report prepared. In addition, fresh specimens of laterite from Bhubaneswar were taken up for chemical analysis. Heavy-mineral analysis of these specimens was carried out and slides of minerals prepared for a study of laterite-formation. This work on laterite is of a complicated nature and will take considerable time for completion. The laterite zone near Mirzapur was again explored with a view to studying the diagenesis of the rock, and ten samples of laterite and weathered substrata were collected for chemical analysis and petrographic examination. Considerable progress in the examination of these specimens was made.

Twenty-five rock-specimens from Nubia, Egypt, had been examined during the previous year (1962-63, p. 104). A detailed report was prepared during the year under review.

A large number of soil-specimens from Morhana-Pahar, District Mirzapur, received from the University of Allahabad, were subjected to chemical analysis and petrographic examination. A report on this work is under preparation. Several specimens of soil from the excavation at Bilawali were examined and a report on this work prepared.

Some samples of rock from the rock-cut caves at Bagh were examined with a view to studying the causes of weathering. A thin section of a rock-specimen was prepared and a report on this investigation completed.

Several specimens of soil from Hoshangabad, Mirzapur, Katmandu, Hastinapura and Ambkheri were subjected to mechanical analysis, chemical analysis, heavy-mineral analysis and petrographic examination for the study of the mode of their formation or deposition with a view to reconstructing the climatic conditions prevailing in those times. The preparation of reports of these investigations was also taken up.

Some specimens of beads from Kalibangan were examined, and the nature of materials used in making them was determined.

TREATMENT OF EXCAVATED OBJECTS AND MUSEUM-EXHIBITS

One thousand, six hundred and forty-six antiquities, made variously of copper, bronze, iron, lead, silver, etc., were chemically treated and preserved. The results of chemical treatment of these antiquities were very satisfactory.

A lot of fifty-nine paintings on paper, canvas and leather, received from the Archae-logical Museum at Bijapur for examination, chemical treatment and preservation, were found on examination to have been extensively damaged by accretions and flaking which had resulted in considerable loss of pigments. Many of these were subjected to fumigation for eradication of insect-pests and a large number of them were chemically treated and preserved.

The copper *kalasa* of the Lakshmi-Narayana temple, Chamba, was chemically treated and preserved as a preliminary to gilding. Palm-leaf manuscripts, one hundred and fifty-three in number, received from the Indian Museum, Calcutta, were chemically treated and preserved.

An oil-painting by Frederic G. Lewis, depicting the installation of Nawwab Ghu-lam Muhammad Ghaus by Lord Elphinstone in 1842, belonging to Fort St. George Museum, Madras, was cleaned. The marble statue of Lord Cornwallis, kept in that Museum, was also cleaned and preserved. Necessary repairs were also successfully carried out for restoring two figures and one thumb.

Nineteen potsherds recovered from the excavation at Pandu-Rajar-dhibi, District Burdwan, were treated chemically to clean the encrustrations and study the paintings on them. The specimens were of black-and-red and lustrous red variety painted with cream-ish white and black pigments respectively. After cleaning the sherds were given a coat of preservative.

ANALYSIS AND RESEARCH

The work of chemical analysis and examination of material associated with archaeological research of diverse kinds was pursued vigorously during the year under report. Of the two hundred and fifty-eight specimens of pottery, terracotta, plaster, mortar,

glass, glaze, metals, alloys and organic material, ninety-two were subjected to chemical analysis for determining their composition. These specimens came from various sites such as Lothal, Sunet, Agra, Bharatpur, Konarak and those in Nubia, etc. Apart from the above forty-six specimens of glaze and plaster, eight metal-specimens and nine rock-specimens were also subjected to detailed chemical analysis and fifty-eight specimens were completely analysed, leaving only five specimens unexamined. In all one hundred and fifty specimens were examined and reports on these investigations prepared.

An investigation carried out on the material of paintings employed by the Mughal artists at Akbar's tomb, Sikandara, District Agra, was carried out.

IX. ARCHAEOLOGICAL GARDENS[1]

ANDHRA PRADESH

1. HILL-TOP, NAGARJUNAKONDA, DISTRICT GUNTUR.—A considerable area in the first enclosure was brought under gardening after clearance of the site and removal of debris. Grassing in plots in front of the rest-house was completed. A substantial area around the Museum-building was cleaned for turfing.

BIHAR

2. EXCAVATED REMAINS, KUMRAHAR, DISTRICT, PATNA.—To augment the existing water-supply and to ensure uniform distribution of water in the different sectors of this garden, pipes and pipe-fitting materials were procured and would be laid out shortly.

3. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, NALANDA, DISTRICT PATNA.—A 10-h.p. electric motor coupled with a centrifugal pump was installed in the newly-bored tubewell. This has solved the problem of water-scarcity in this garden. Hardy shrubs were planted on the slopes behind staff-quarter and saplings of *Delonix regia* along the road from the booking-office to the Museum-gate.

DELHI

4. QUTB, DELHI.—A pumping-set was installed to meet water requirement for irrigation-purposes.

5. RED FORT, DELHI.—An electric motor pumping-set was installed to augment the water-supply.

6. HUMAYUN'S TOMB, NEW DELHI.—After completing preliminary operations, the land adjoining the southern wall of Humayun's tomb at 'Arab-Sarai was developed into a good garden, and irrigational pipe-lines were laid out inside this area. Ornamental iron fencings were fixed along the roads leading to the monument.

KERALA

7. MISCELLANEOUS GARDENS.—Extensive fruit- and flower-gardens were started at Kottapuram, Krishnapuram and Padmanabhapuram.

MADHYA PRADESH

8. KHAJURAHO, DISTRICT CHHATARPUR.—Despite water shortage the gardens attached to the western group of temples were well looked after.

MAHARASHTRA

9. SHANWARWADA, POONA.—Plantation of new shrubbery and replacement of old roses with selected varieties of new roses were done and some additional shrubberies and rose-beds were incorporated.

[1]Information from : 7. the Director of Archaeology, Kerala State; 12, the Director of Archaeology and Museums, Rajasthan State; and the rest, the Garden Superintendent of the Survey.

MYSORE

10. MONUMENTS, BIJAPUR.—The general standard of maintenance of all the gardens attached to monuments at Bijapur was further improved by bringing fallow plots under grassing, plantation of ornamental trees along road-sides and introduction of a rosarium at the upper lawns of the Gol-Gumbad garden. Two overhead tanks, each of 5,000 gallons capacity, were erected, one at Gol-Gumbad and the other at Jod-Gumbad, and necessary pipe-connexions from these tanks were laid for irrigation. A further extension of pipe lines at 'Asar-Mahal was also completed. A decent garden, comprising lawns, shrubbery, hedges, orchards, etc., was laid out around 'Ali II Rauza (Bara-Kaman); this has enhanced the beauty of the surroundings which had hitherto been lying barren and neglected.

RAJASTHAN

11. PALACES, DIG, DISTRICT BHARATPUR.—In this gardenal5-h.p. motor coupled with a centrifugal pump with a suitable starter was installed to fill up the huge overhead tank to run the fountains on festivals and other important occasions.

12. MISCELLANEOUS GARDENS.—Gardens attached to Dilaram and Mohanbari, Amber, Museum-building at Bharatpur, Observatory at Jaipur, and. monuments at Jodhpur and Mandore, continued to be well looked after.

UTTAR PRADESH

13. FORT, AGRA.—A considerable part of lawns of Diwan-i-'Am and the hedges along the road were damaged on the occasion of a function. Part of the hedge was removed and replanted and the damaged portion of the lawns repaired.

14. 'IDGAH, AGRA.—A simple terrace-garden around this monument was laid out and a small electric pumping-set installed for irrigation. All the material to facilitate uniform irrigation of this garden was procured and arrangements made to lay out the pipe-lines and hydrants at appropriate points.

15. KHAN-I-'ALAM, AGRA.—Most of the plants in the c/»A-house in lower Khan-i-' Alam were damaged due to inundation on account of heavy floods in the Yamuna. The house was renovated and the casualities replaced. The rockeries were also re-set.

16. TAJ-MAHAL, AGRA.—.*Saroo*-plants in the rear proximity flanking the principal canal, which had outlived their normal life, were replaced with new healthy plants systematically.

17. AKBAR'S TOMB, SIKANDARA, AGRA.—TWO electric pumping-sets were installed in the two wells. One well was also desilted and repaired to augment the water-supply.

18. MARYAM'S TOMB, SIKANDARA, AGRA.—Stone edging along the roads was completed.

19. EXCAVATED REMAINS AND ARCHAEOLOGICAL MUSEUM, SARNATH, DISTRICT VARANASI.—Erection of an overhead tank and laying out of pipe-lines were completed; this has augmented water-supply to various sectors of the garden as well as to the rest-house.

X. PUBLICATIONS

PUBLICATIONS OF THE SURVEY

1. 'ANCIENT INDIA'—Numbers 18 and 19 (1962-63) were published.

2. 'ANNUAL REPORT ON INDIAN EPIGRAPHY'.—The Reports for 1958-59 and 1959-60 were published.

3. CORPUS INSCRIPTIONUM INDICARUM SERIES.—Part ii of volume II, *Bharhut Inscriptions,* by Heinrich Lueders, and volume V (previously mentioned as VI), *Inscriptions of the Vakatakas,* by V. V. Mirashi were printed.

4. 'EPIGRAPHIA INDICA'.—The following parts were published : parts viii (October, 1960) of volume XXXIII , viii (October, 1962) of volume XXXIV, and ii to vi (April, 1963, to April, 1964) of XXXV.

5. GUIDE-BOOKS.—The Hindi version of *Kusinagara,* by D. R. Patil, was released early this year.

6. PICTURE-POSTCARDS.—The sets of Agra A and B, Aihole, Ajanta, Aurangabad-Daulatabad, Badami, Belur, Bhubaneswar, Bijapur, Chitorgarh, Delhi A, B and C, Elephanta, Ellora, Fatehpur-Sikri, Gingee, Hampi, Kanheri, Khajuraho, Konarak A and B, Mahabalipuram, Mandu, Nalanda, Patadkal, Sanchi and Sarnath were reprinted. Two new sets, Vishnupur and Nagarjunakonda, were also printed.

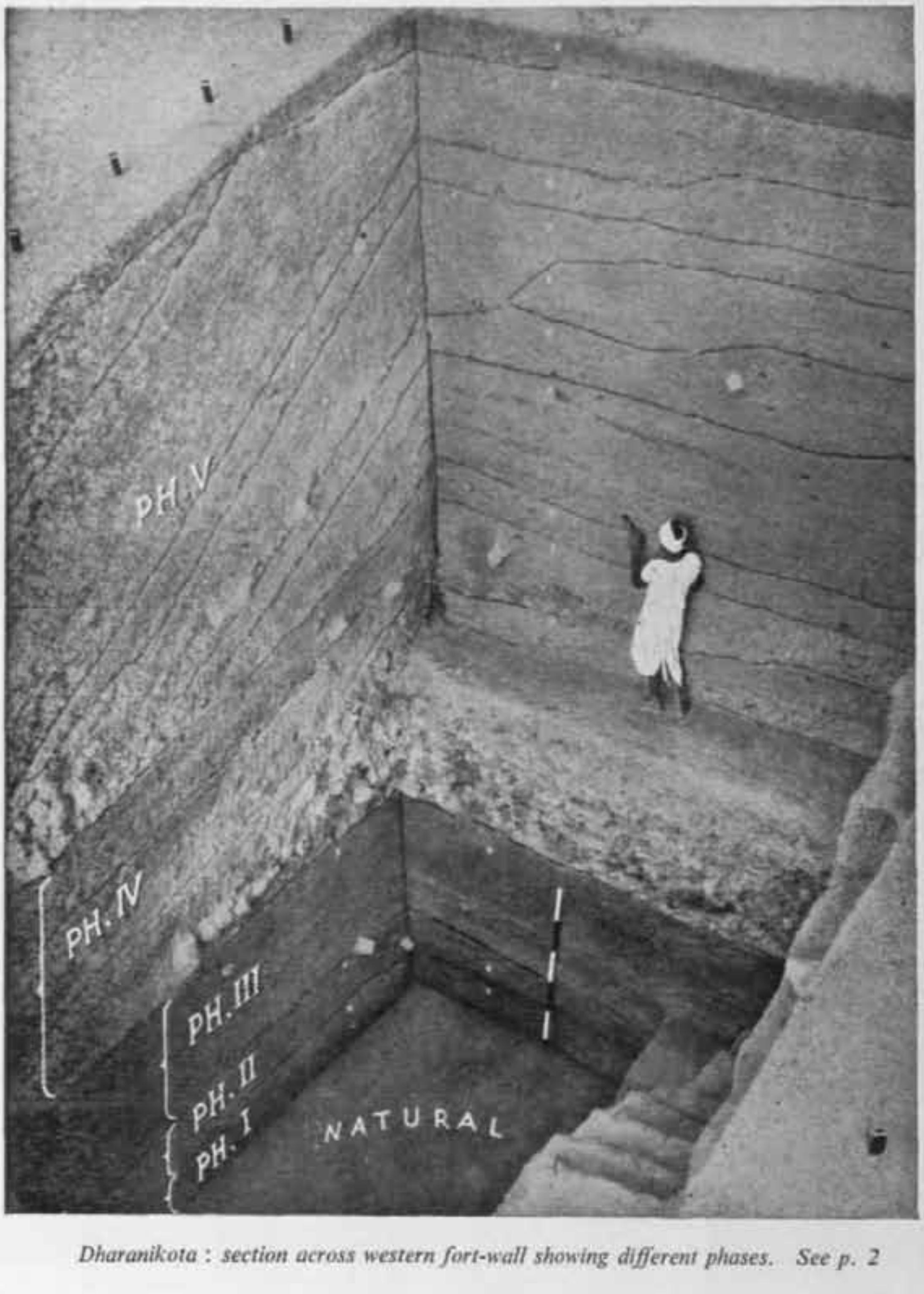
7. PUBLICATIONS FOR THE TWENTY-SIXTH INTERNATIONAL CONGRESS OF ORIENTALISTS.—At the instance of the Organizing Committee of the Twenty-sixth International Congress of Orientalists, the Survey produced two books, *Archaeological Remains, Monuments and Museums* in two volumes, and a guide-book to Delhi entitled *Delhi and its Neighbourhood,* by Y. D. Sharma.

OTHER PUBLICATIONS

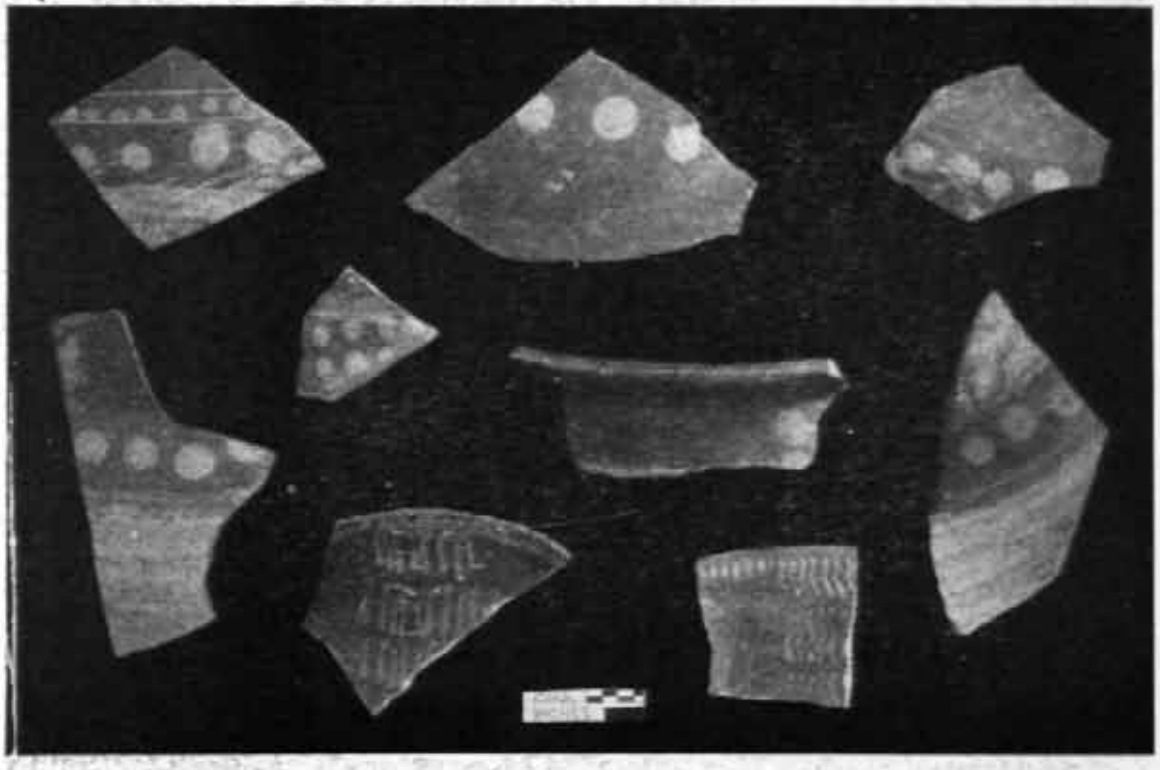
1. EXCAVATION-REPORTS.—The Director of Archaeology, Andhra Pradesh, published *Buddhist Remains in Salihundam,* by R. Subrahmanyam. The Department of Ancient Indian History, Culture and Archaeology, University of Sugor, published a book *Sagar through the Ages'* by K. D. Bajpai, incorporating the salient features of the excavations at Eran.

2. MUSEUM-CATALOGUES.—The Director of Archaeology, Andhra Pradesh, produced the following monographs : *An Early Sculpture of Narasimha,* by Md. Abdul Waheed Khan, *Kshatrapa Coins,* by H. V. Trivedi, and *Bahmani Coins,* by Abdul Wali Khan.

3. OTHER PUBLICATIONS.—The Director of Archaeology, Andhra Pradesh, brought out *Medeival History of Deccan,* by S. K. Sinha.



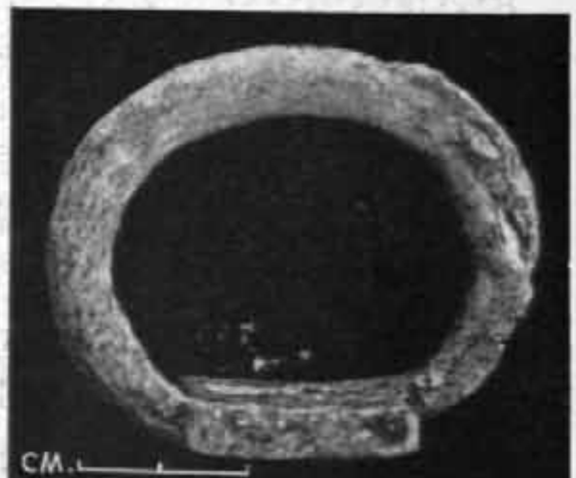
Dharanikota : section across western fort-wall showing different phases. *See p. 2*



A



B

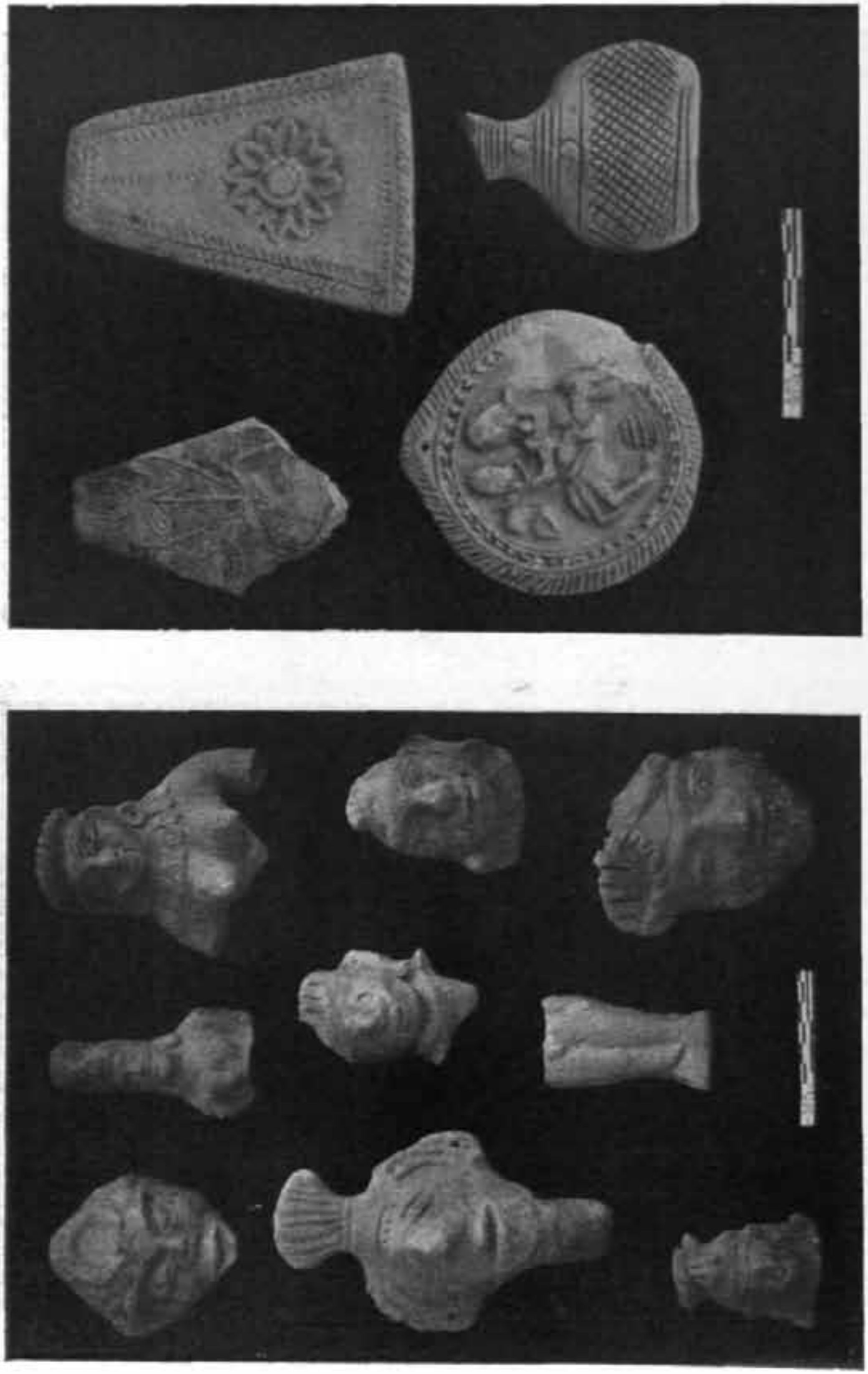


C

Chirand: A, *painted ware, Period I A*; B, *ground stone celt, Period II*; C, *copper bangle, Period III. See pp. 6 and 8*

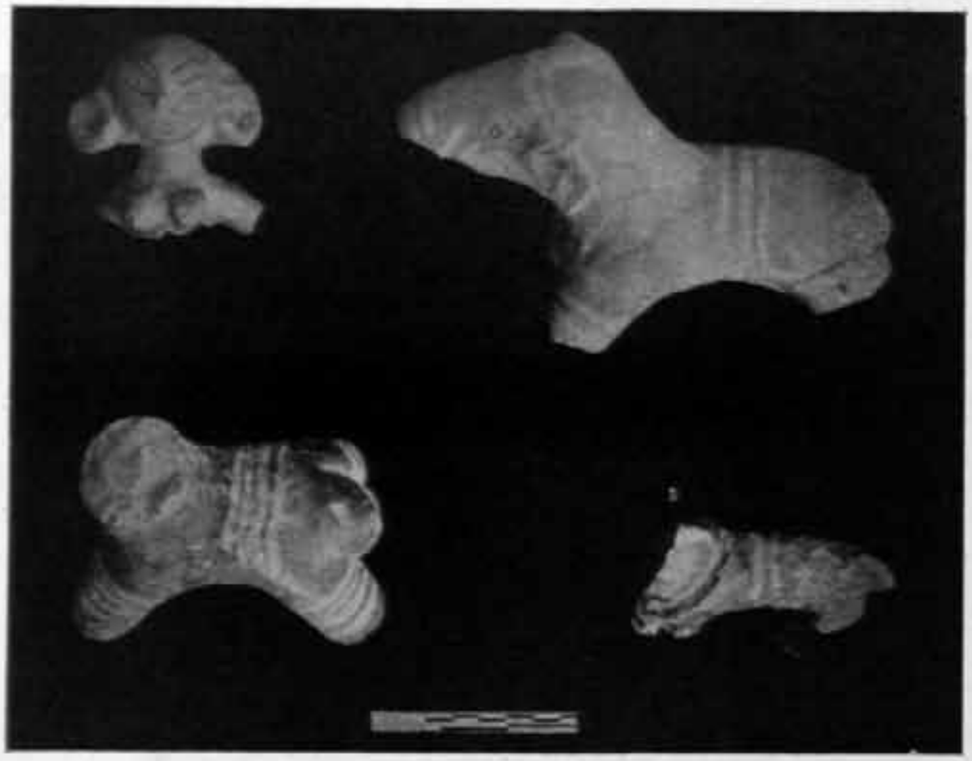


Chirand : structures of five phases, Period III. *See p. 8*



A B

Chirand : A, terracotta figurines, and B, terracotta plaques and naga figure, Period III. See p. 8

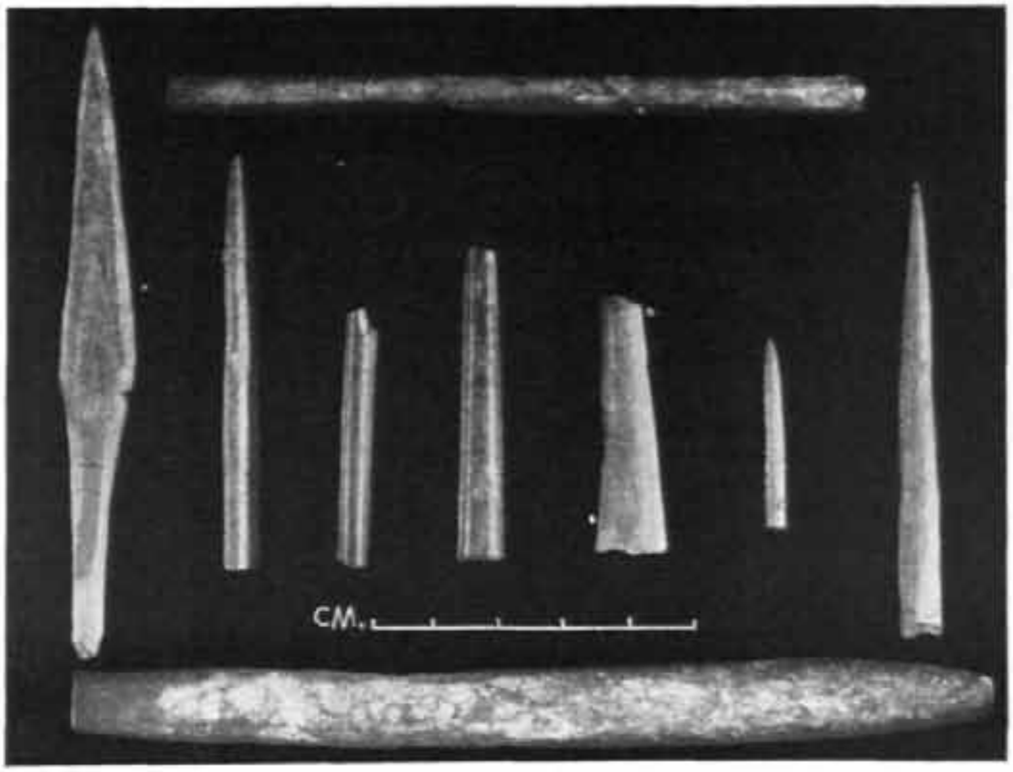


A



B

Buxar : terracotta figurines, A, *Period I, and* B, *Period II.* *See p. 8*



A

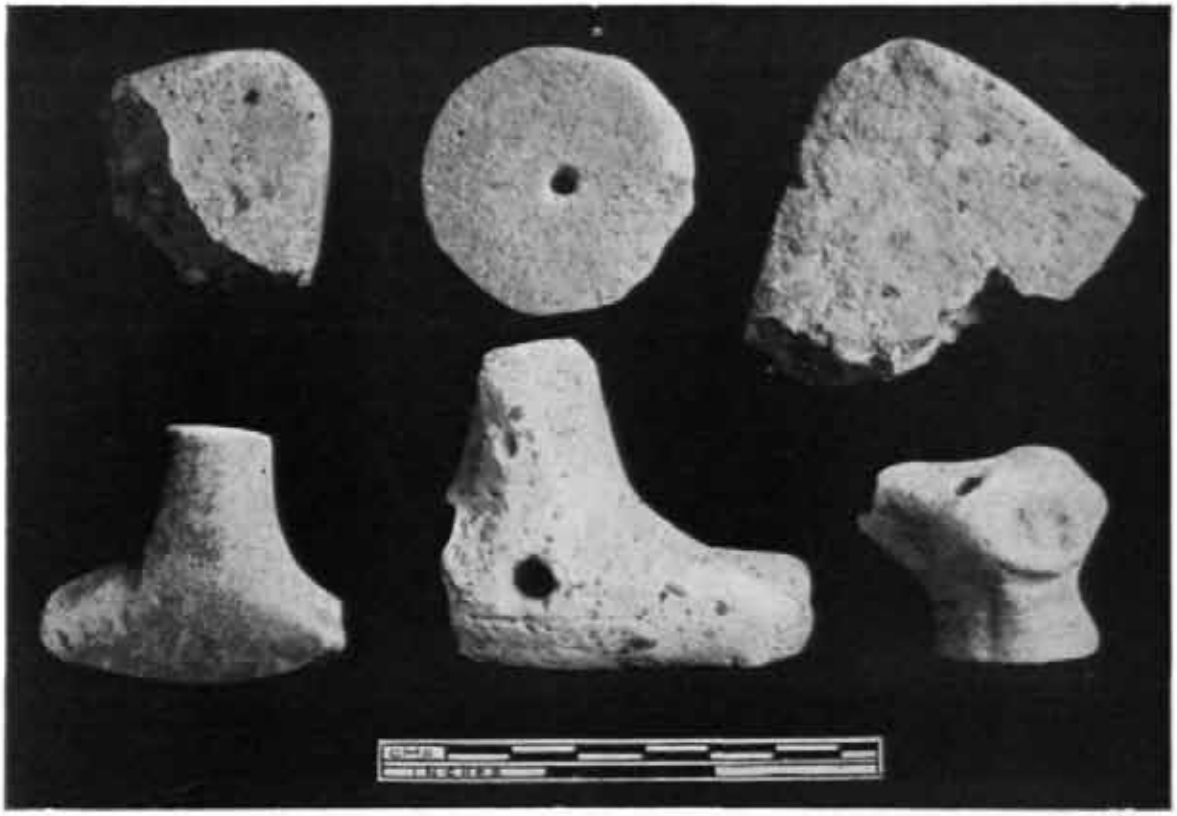


B

Nagara : A, *bone objects and* B, *terracotta mother-goddess, Period II. See P. 10*



Desalpur : fortification-wall. See p. 11



A

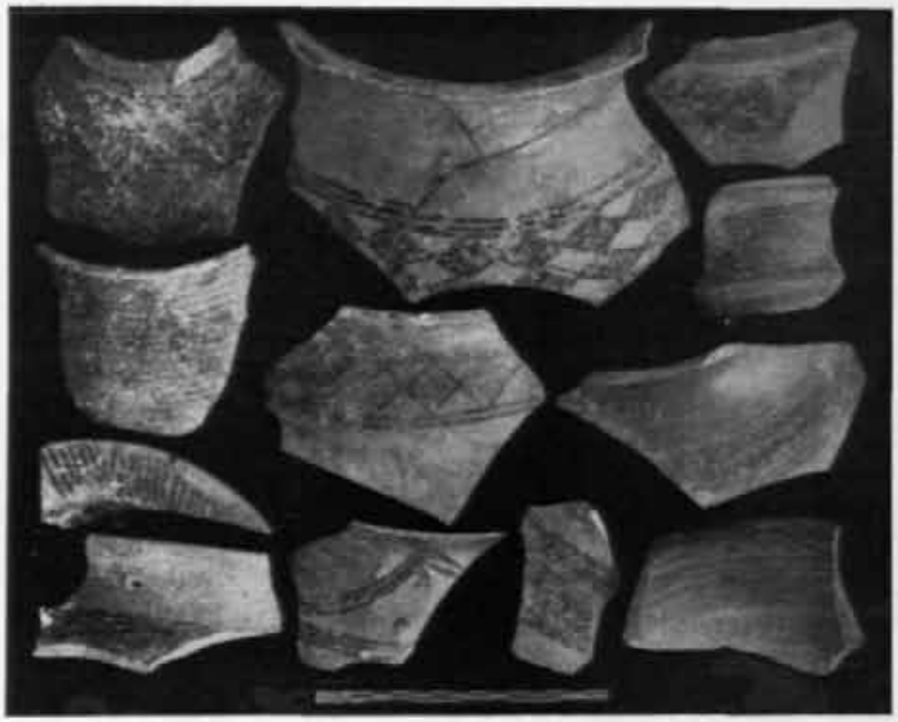


B



C

Desalpur : A, *terracotta cakes, cart-frames, cart-wheel, animal-head, etc;* B, *inscribed seal;* C, *sealing.*
See p. 12

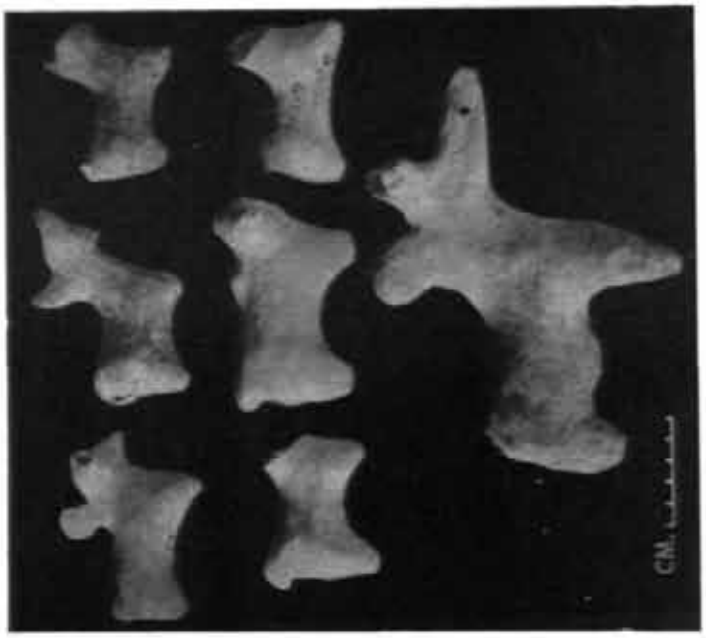


A

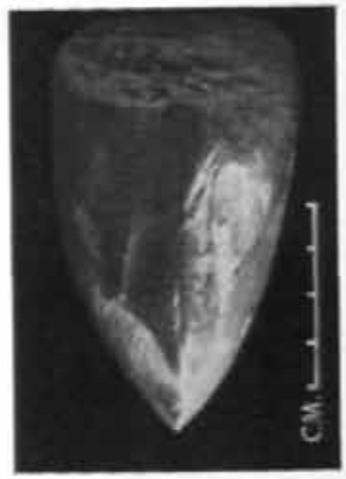


B

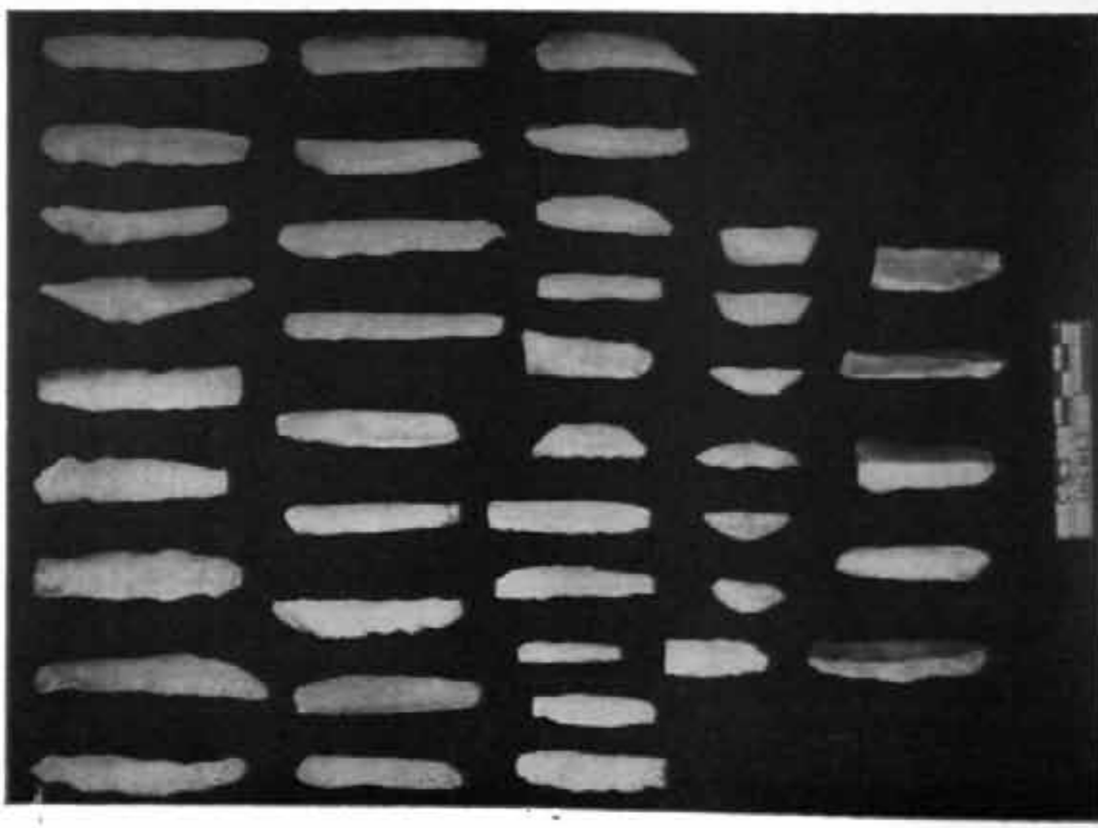
Eran : A, black-painted red ware, and B, white-painted black-and-red ware, Period I. *See p. 15*



B

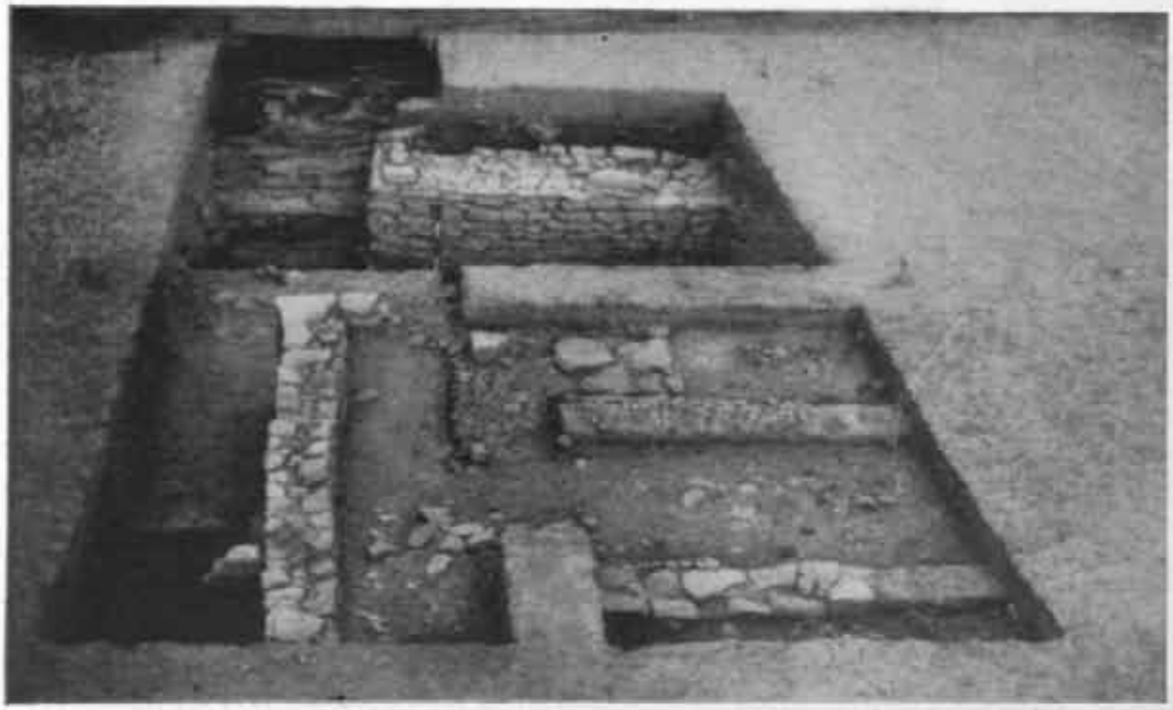


C



A

Eran : *A*, *microliths, Period I*; B, *terracotta animal figurines*, 1-6, *Period I, and 7, Period III*; C, *neolithic celt, Period I.* *See pp. 15 and 16*

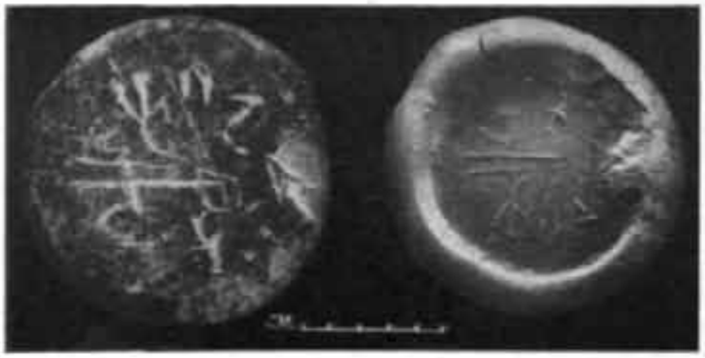


A

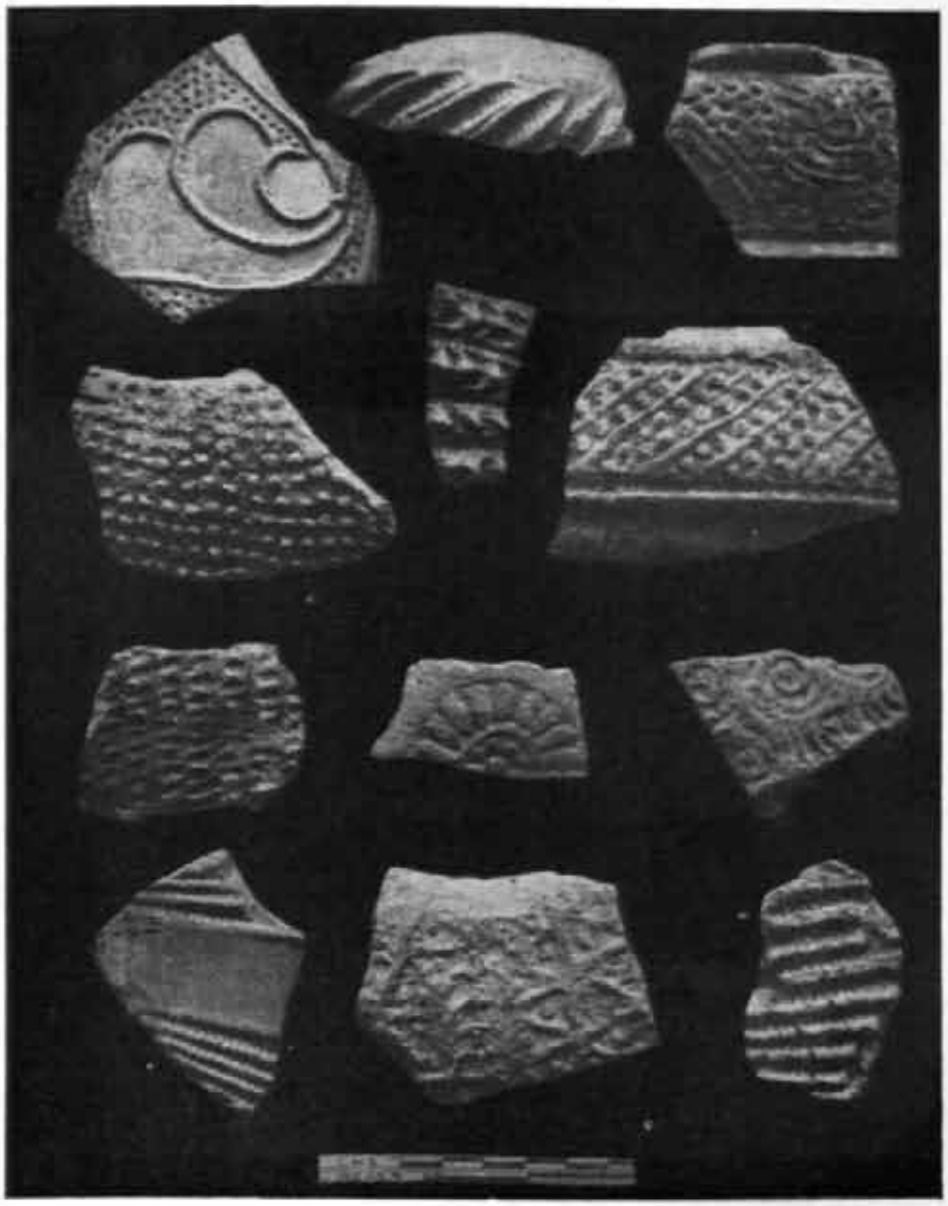


B

Besnagar : A, *structures of upper levels in BSN-1;* B, *collapsed structures in BSN-3, north-west corner, showing two phases.* *See pp. 16 and 17*



A

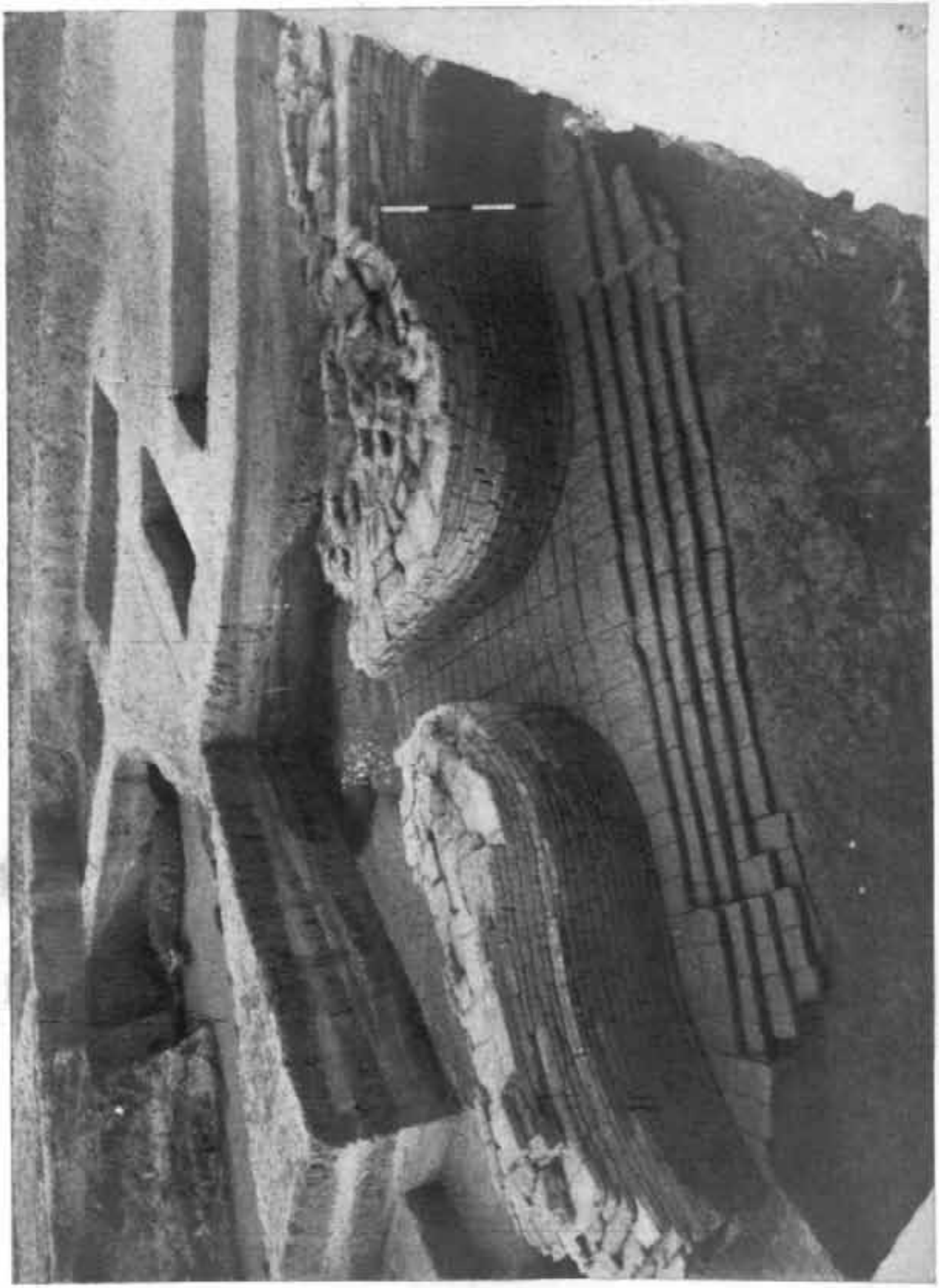


B

Besnagar : A, *inscribed seal, Period III;* B, *decorated pottery, Period V. See p. 17*



Gudiyam : general view of cave showing layout of cuttings. *See p. 19*



Kaveripattanam (Vanagiri) : structures. See p. 20

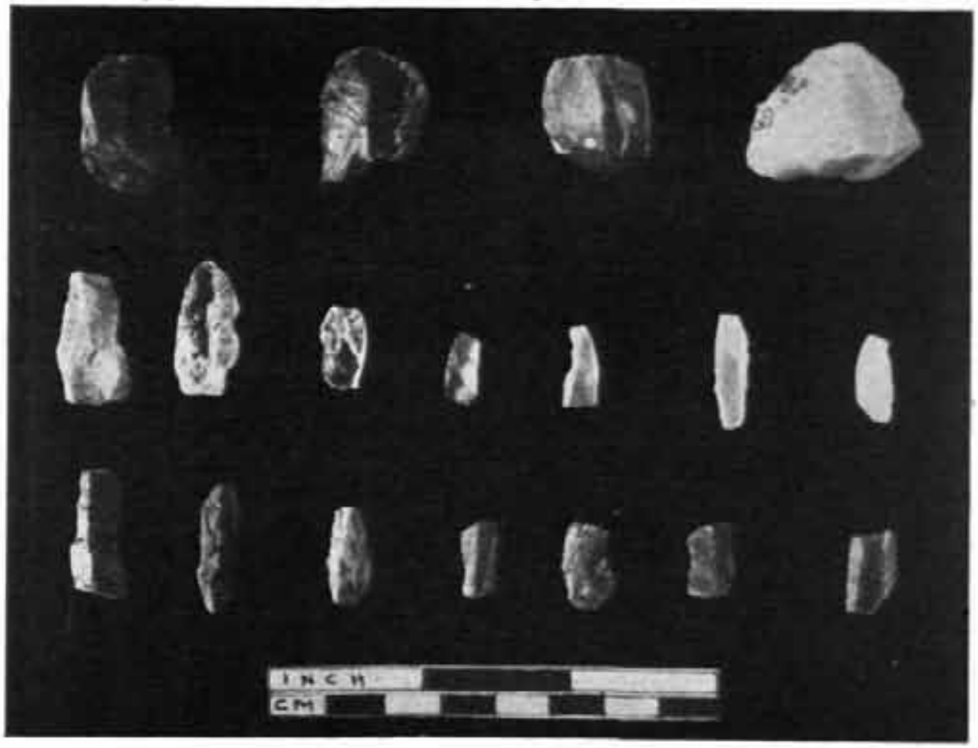


A



B

Hemmige : A, *pottery-group;* B, *ground stone axes.* *See p. 26*



A



B

Hemmige : A, *microliths;* B, *Middle Stone Age tools from river-bank.* *See p. 27*



Kalibangan : salient on southern side in KLB-1, Harappan. *See p. 31*

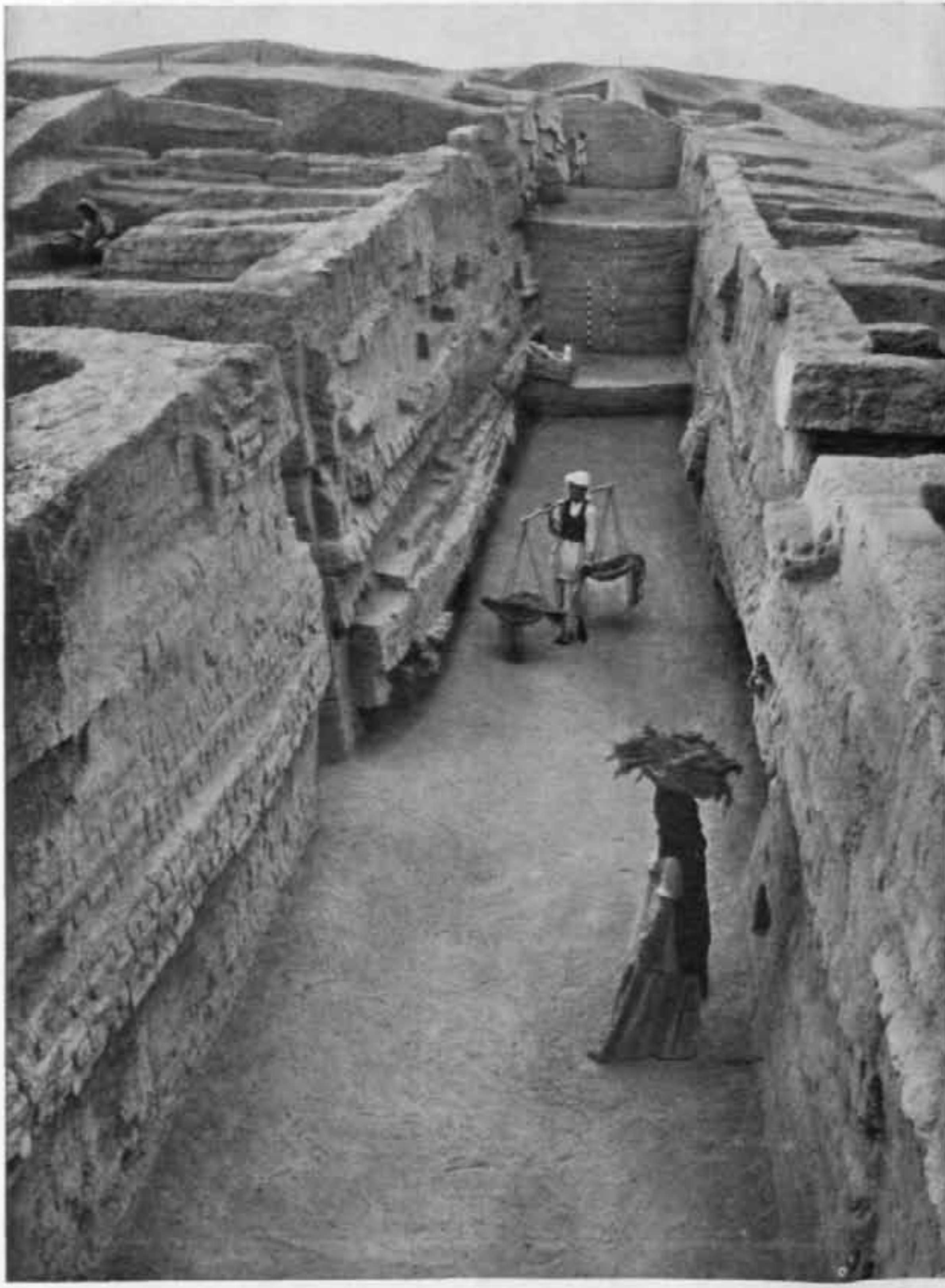


A

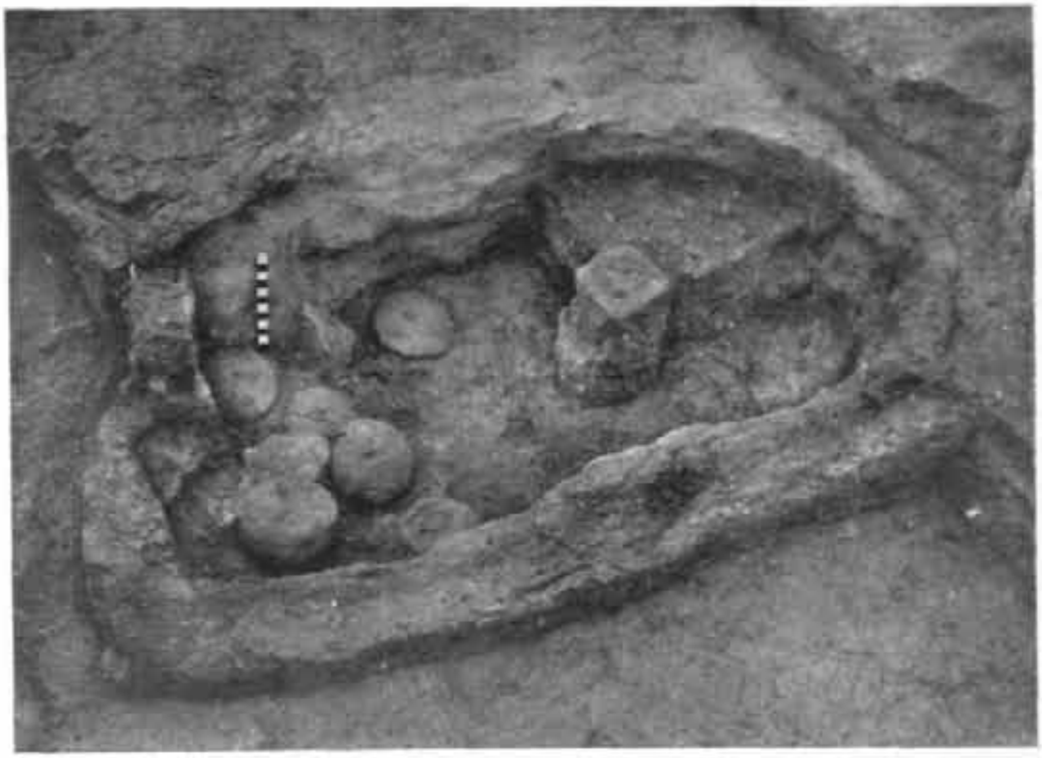


B

Kalibangan : A, displaced strata and subsided structure in KLB-I, pre-Harappan; B, closer view of salient structure in KLB-I, showing four post-holes on outer edge, Harappan. See pp. 30 and 31



Kalibangan, KLB-2 : arterial thoroughfare, Harappan. *See p. 31*

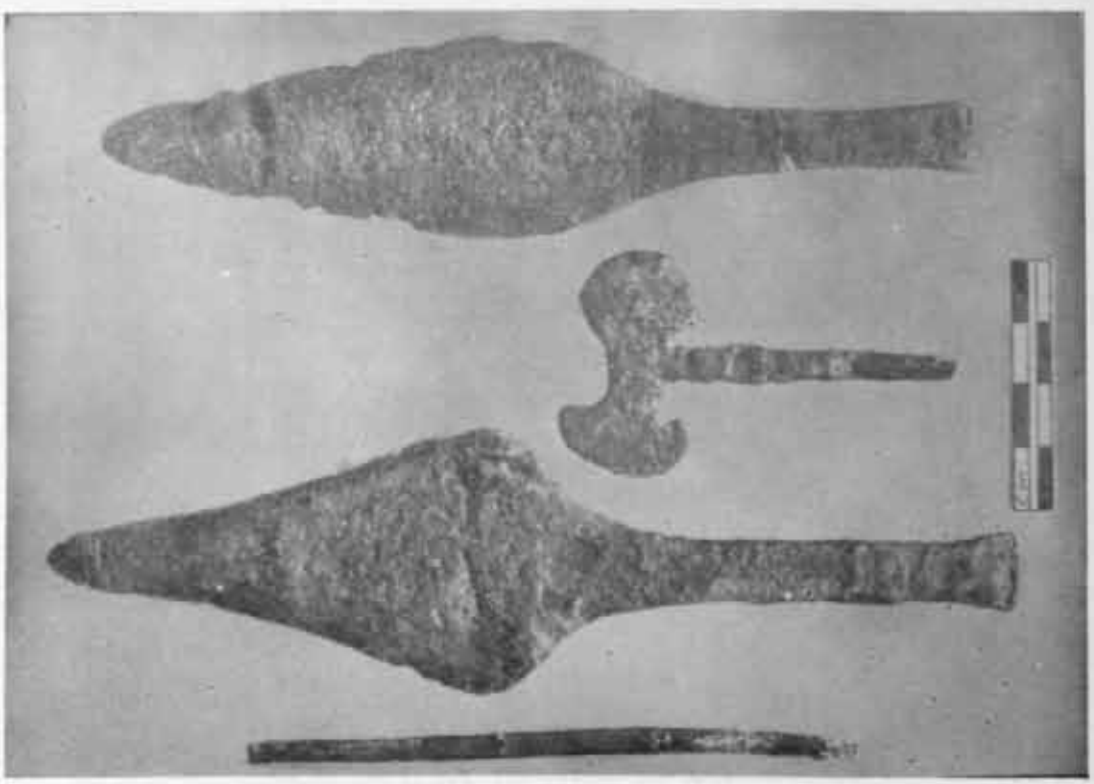


A

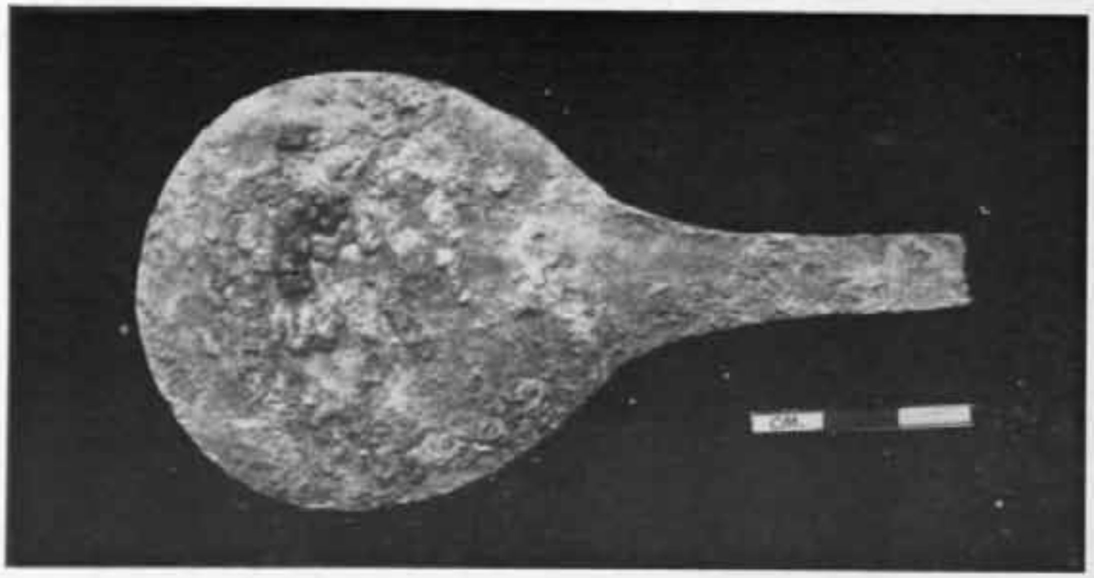


B

Kalibangan : A, *'fire-altar' in KLB-2, Harappan;* B, *cemetery-area, Harappan, showing efflorescence of salt. See pp. 31 and 38*

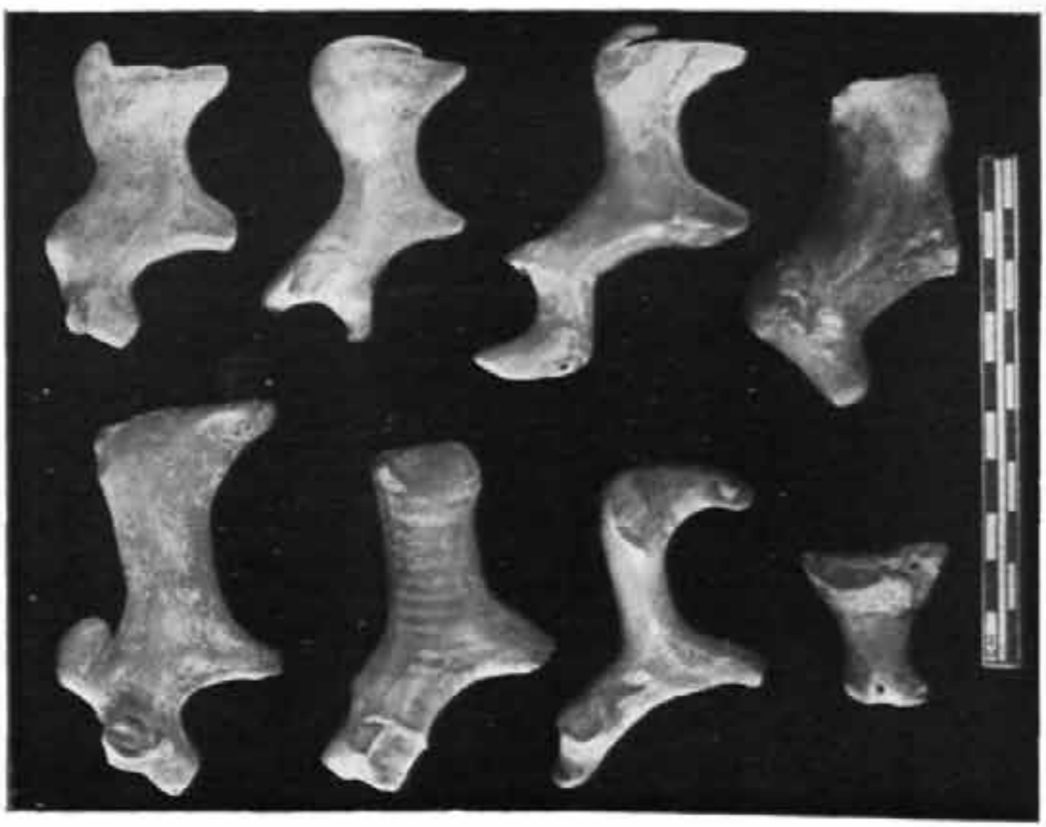


A

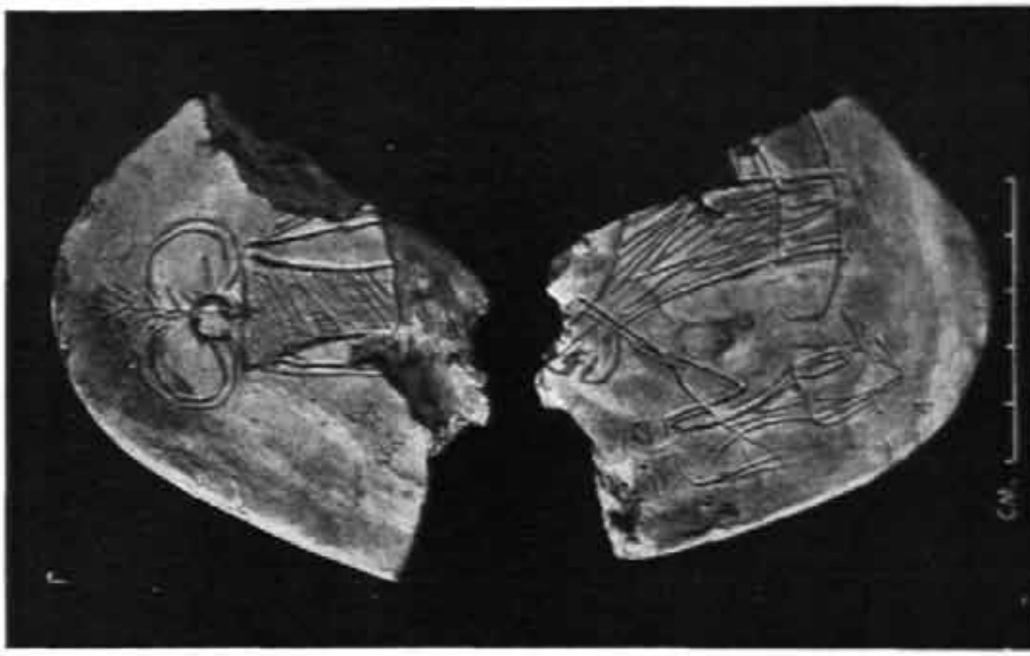


B

Kalibangan : A, *copper and bronze objects, and* B, *copper or bronze mirror, Harappan.* *See pp. 31 and 38*



A



B

Kalibangan : A, terracotta animal figurines, and B, terracotta cake with incised figures on obverse and reverse, Harappan. *See pp. 31 and 38*



A



B

Kalibangan : A, *seals, and* B, *cylinder-seal, Harappan.* *See p. 31*



A



B

Kalibangan : A, extended burial in grave-pit, and B, pot-burial, Harappan. *See p. 38*



A

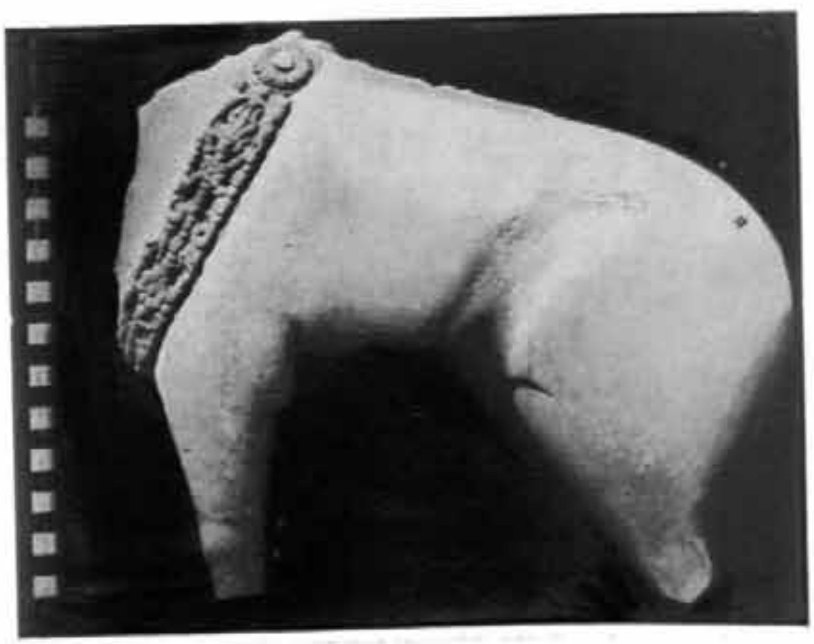


B

Kotia : A, *Meg. I, compartments in cist;* B, *Meg. IV, cist within cairn-circle.* *See p. 40*



A



B

Mainahai : A, pillar-capital; B, decorated bull. *See p. 42*



A

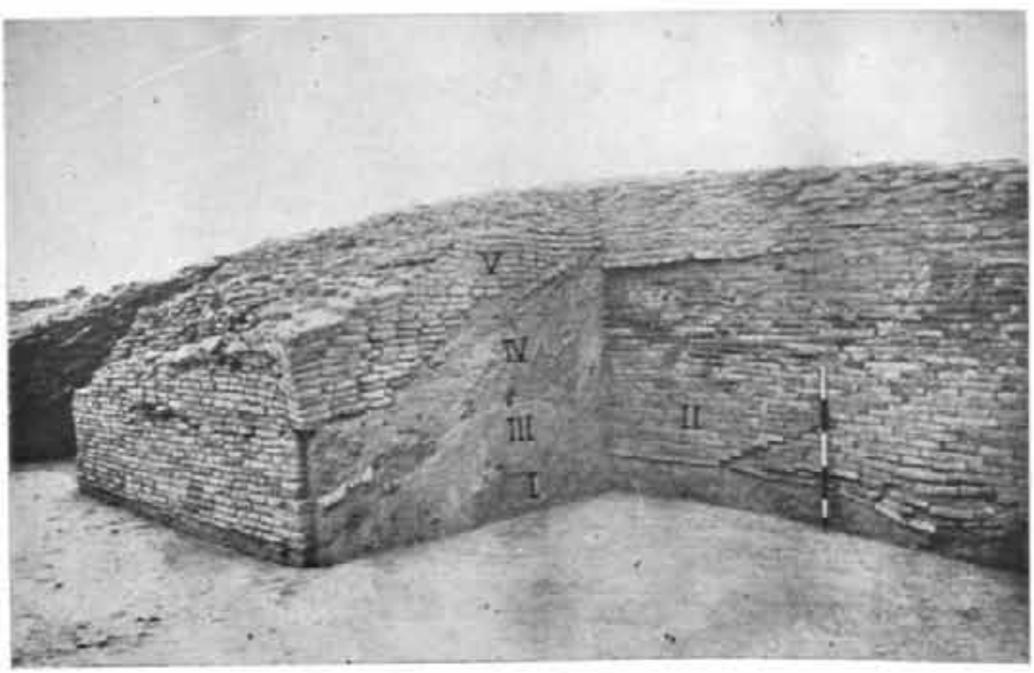


B

Ahichchhatra : A, *multiple ovens, Period II;* B, *structures, Period III.* *See p. 44*



A



B

Achichchhatra : A, *trench across fortification-wall*; B, *five phases of fortification-wall*. *See p. 44*



A



B

Ahichchhatra : rectangular gaps on top of fortification-wall. *See p. 44*



A

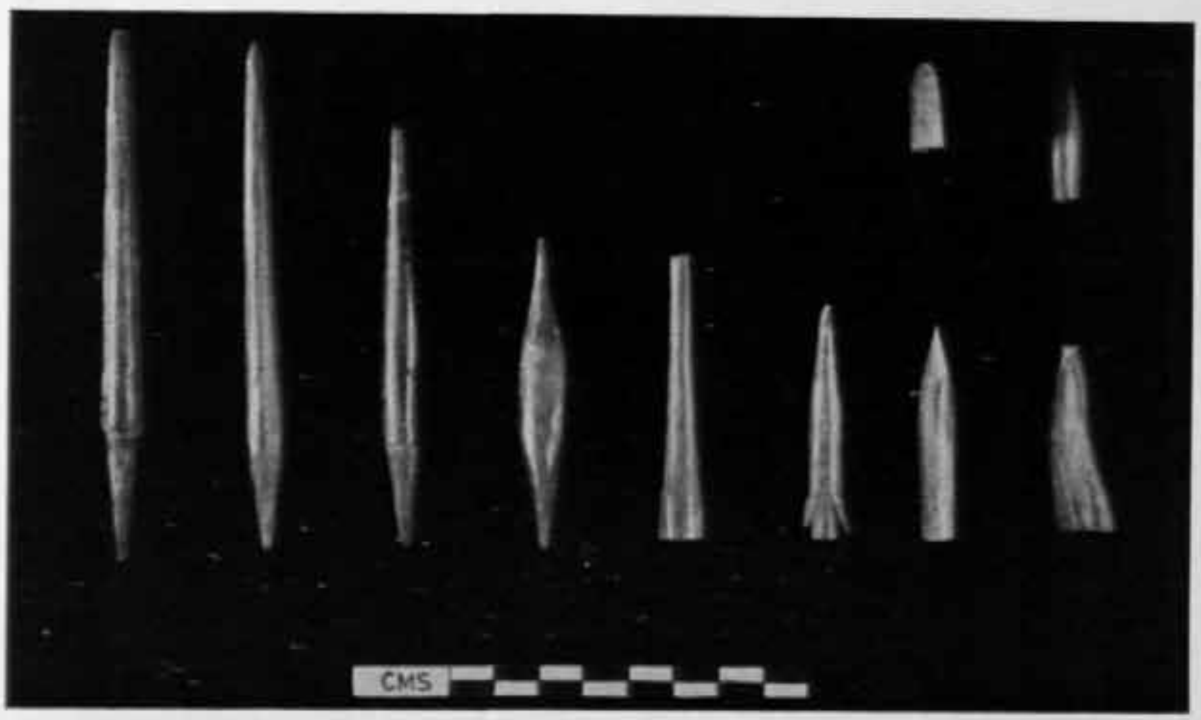


B

Ahichchhatra : pottery with stamped designs, Period III. *See p. 44*

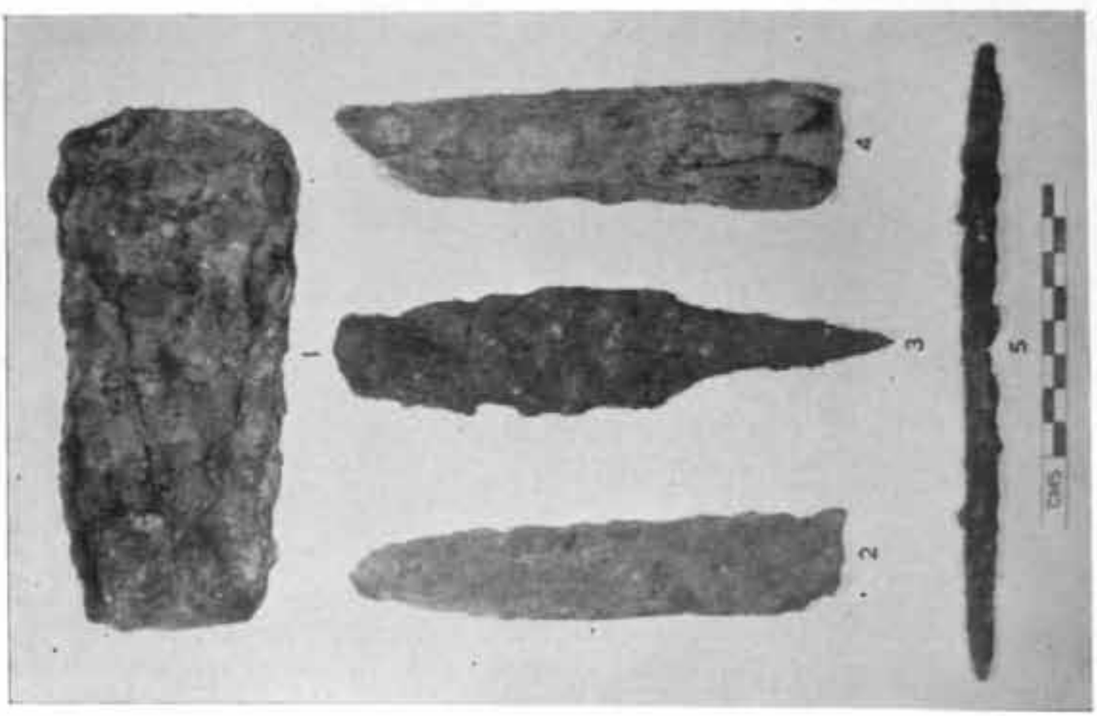


A

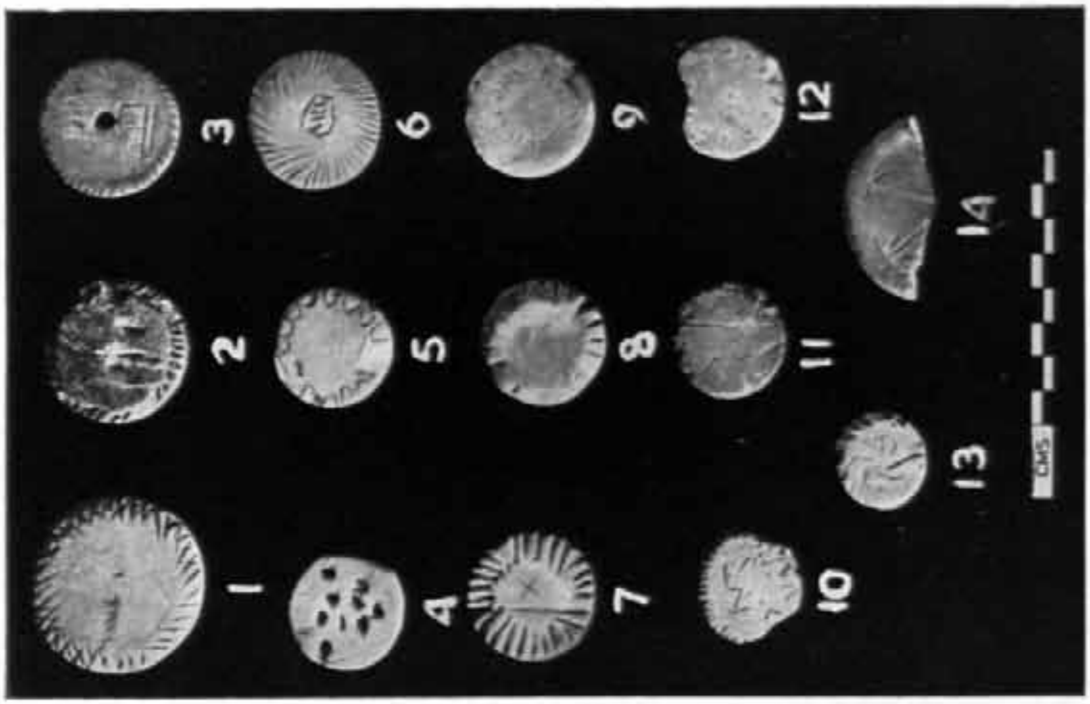


B

Atranjikhera : A, *flakes and cores, Period II;* B, *bone objects, Period III.* *See pp. 47 and 49*



A

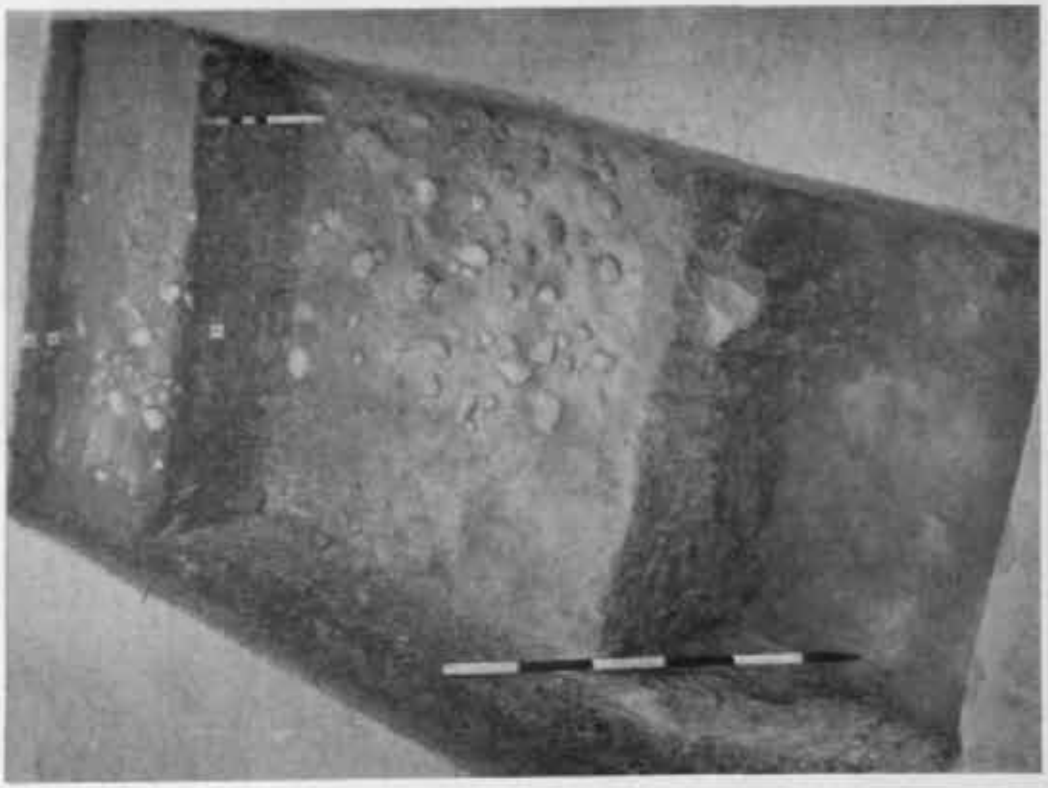


B

Atranjikhera : A, iron objects, and B, terracotta discs. Period III. *See p. 49*

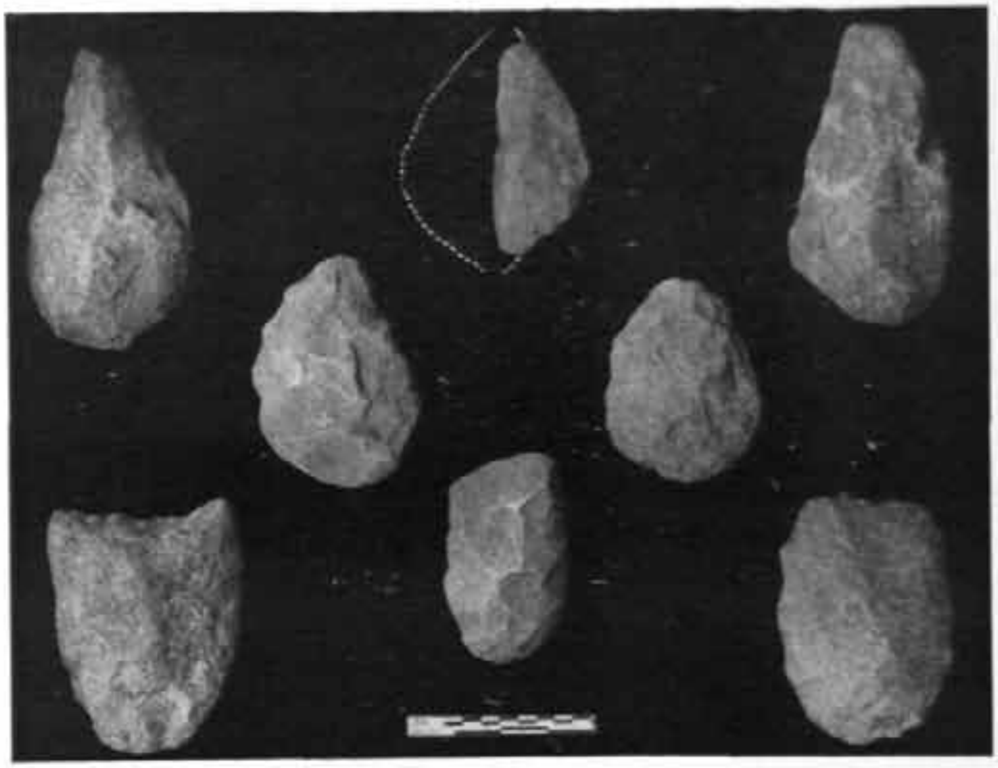


A

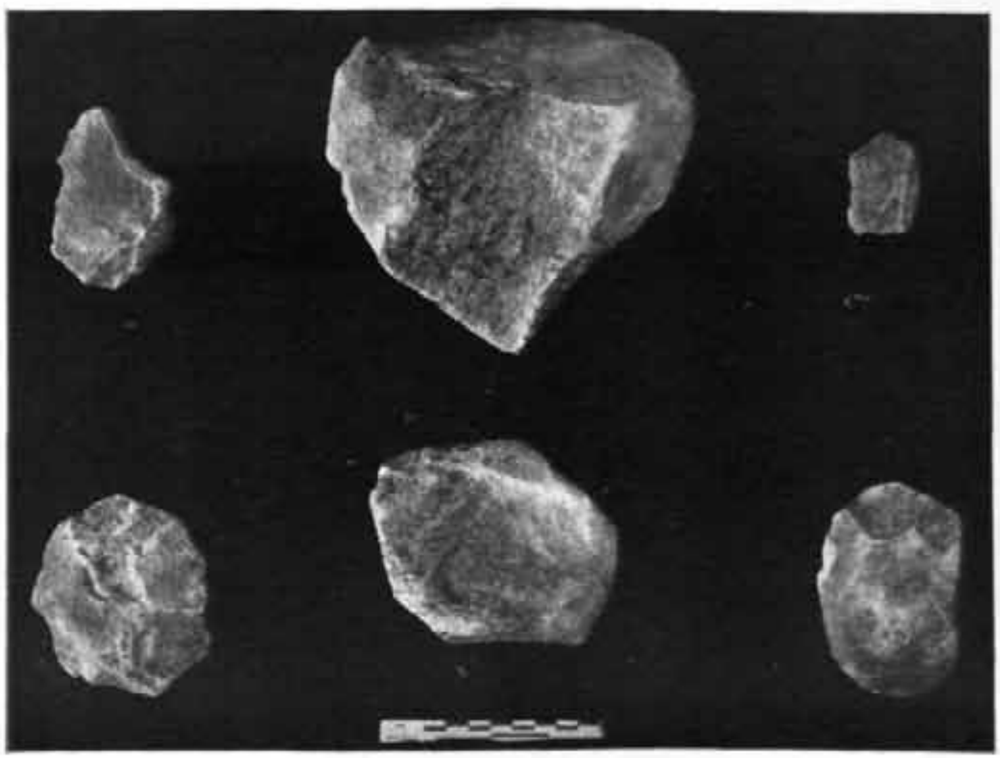


B

Lalitpur : general view of cuttings, A, Locality I; B, Locality II. See p. 49



A

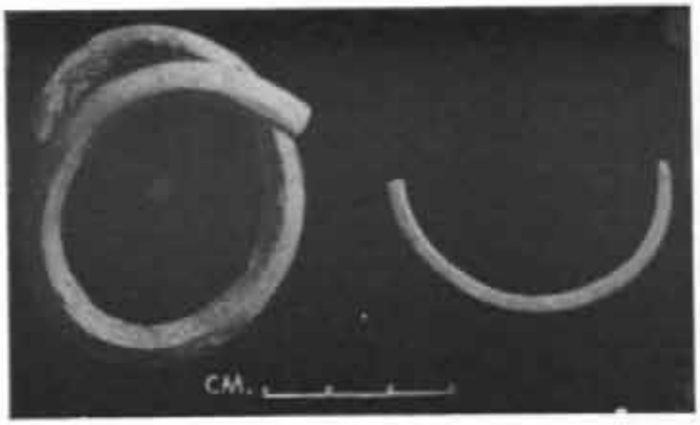


B

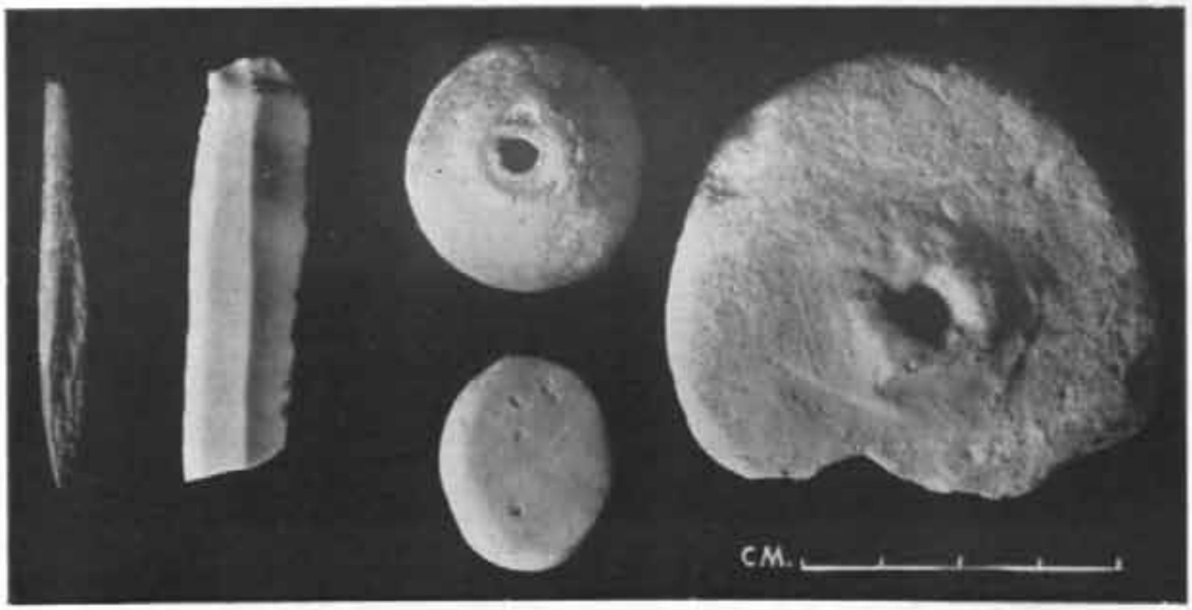
Lalitpur : A, *handaxes and cleavers;* B, *cores, choppers, scrapers and flakes.*
See p. 51



Bargaon : painted pottery. *See p. 56*



A

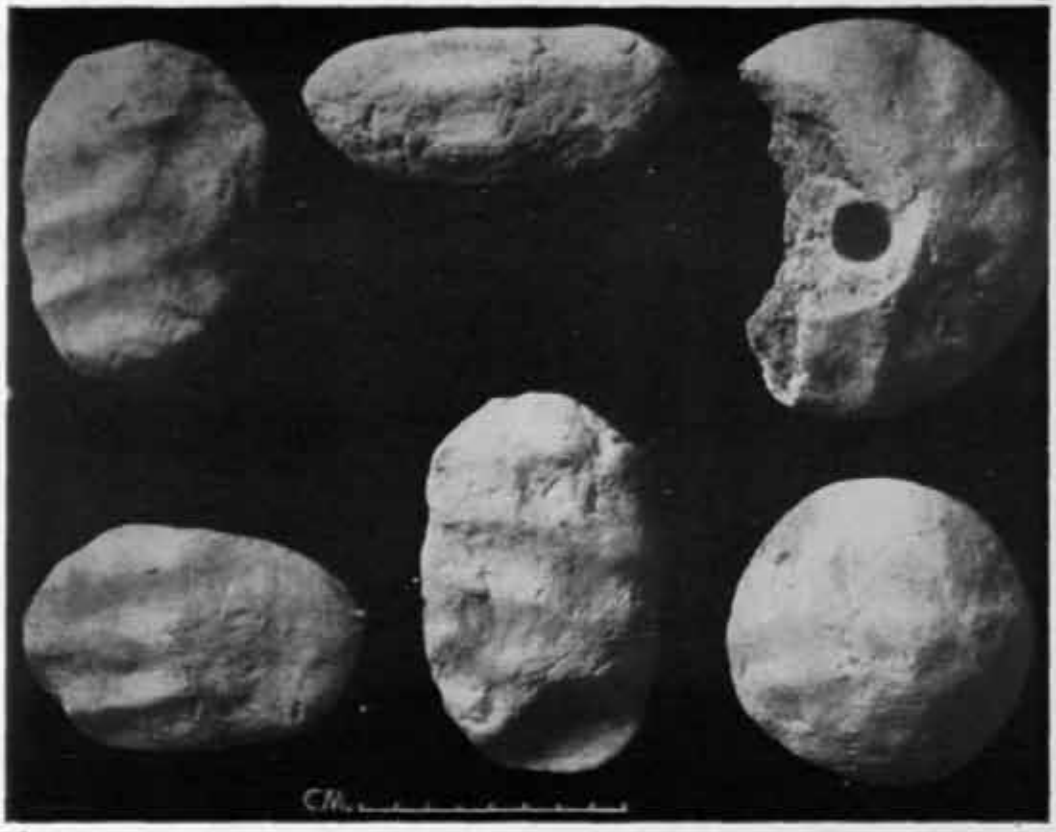


B

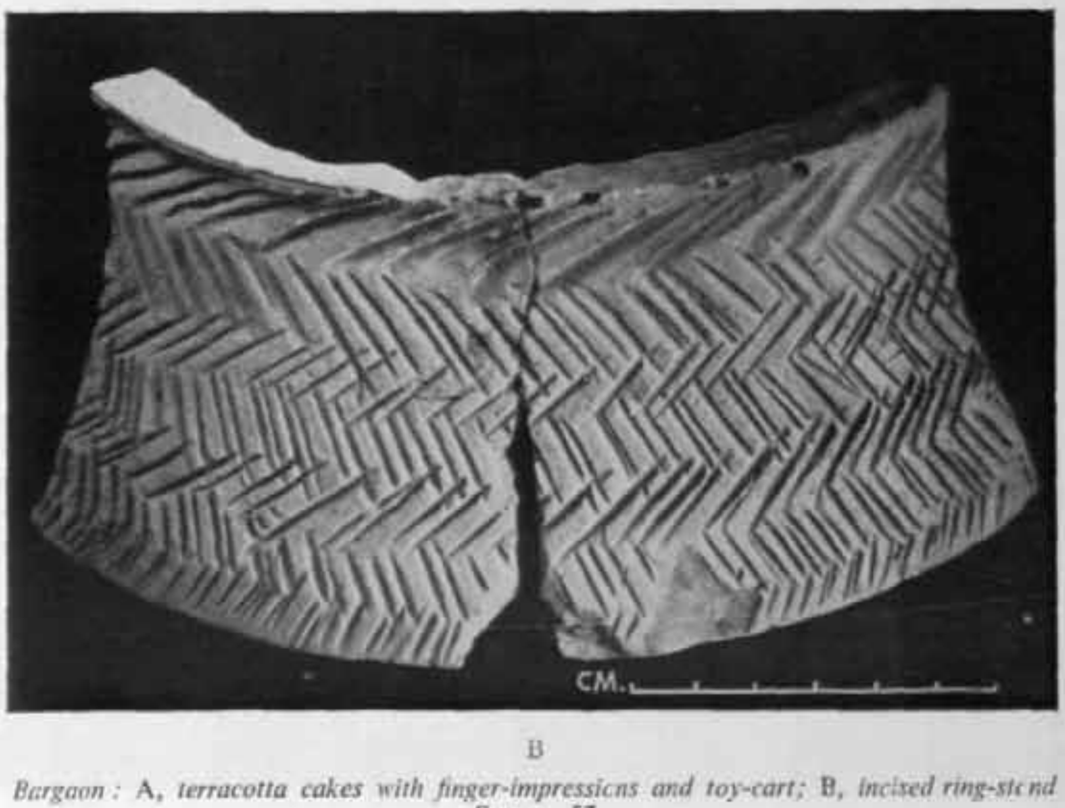


C

Bargaon : A, copper ring; B, *terracotta wheel, bead, chert blade, etc.;* C, *bull-headed terracotta toy-carts.*
See p. 57



A



B

Bargaon : A, *terracotta cakes with finger-impressicns and toy-cart;* B, *incised ring-sternd*
See p. 57

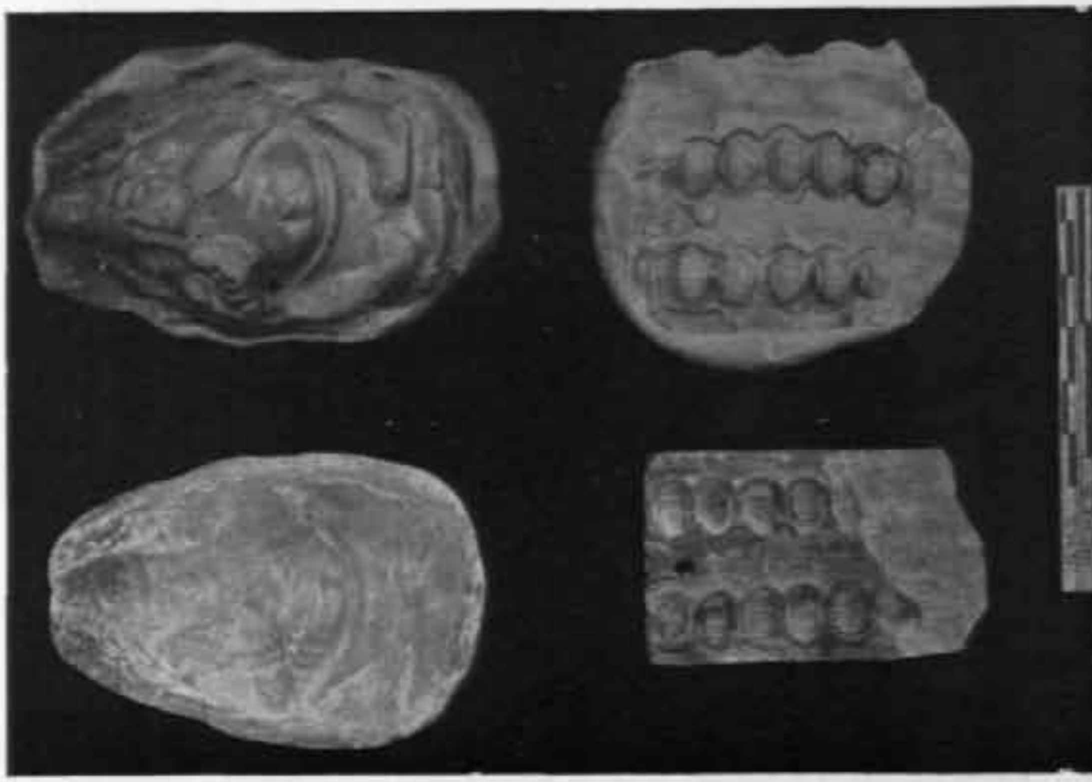


A

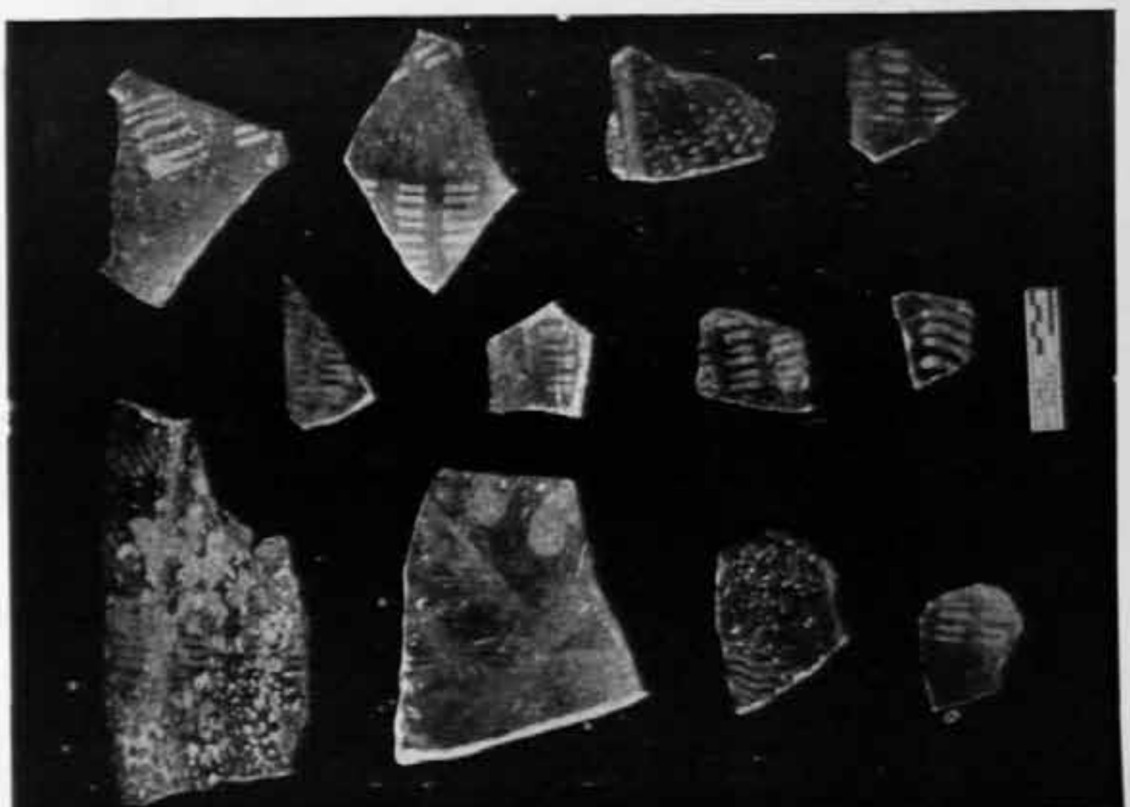


B

Hathinia-Pahar : A, *megolithic monuments;* B, *Meg. X, section showing cist with overlying cairn.* *See p. 57*

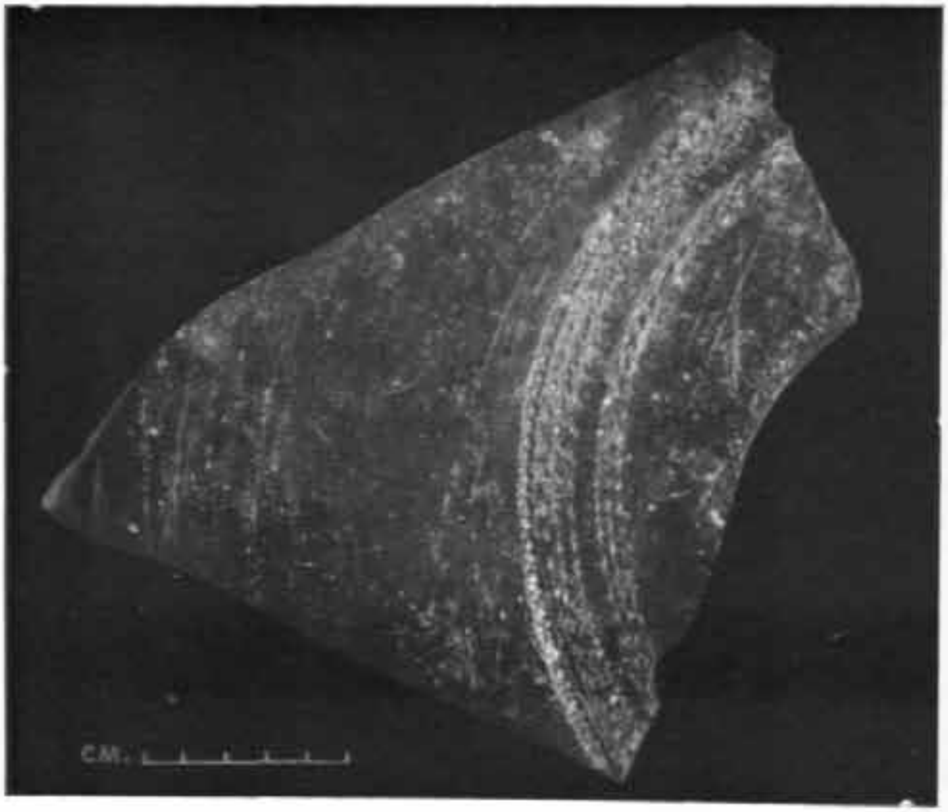


B



A

Rajghat : A, *white painted black-and-red ware, Sub-period IA*; B, *moulds for beads and terracotta human figurines.* *See p. 59*

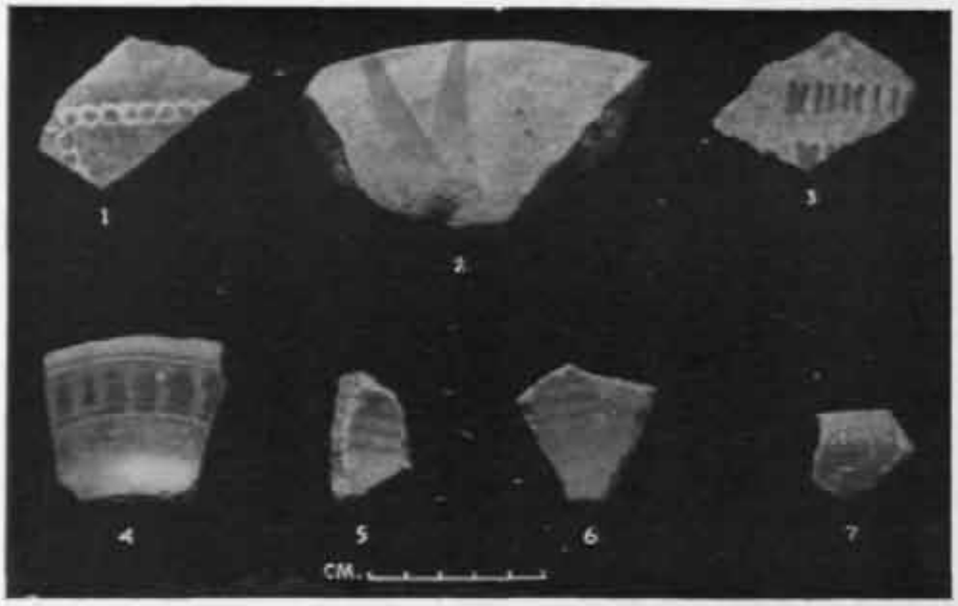


A

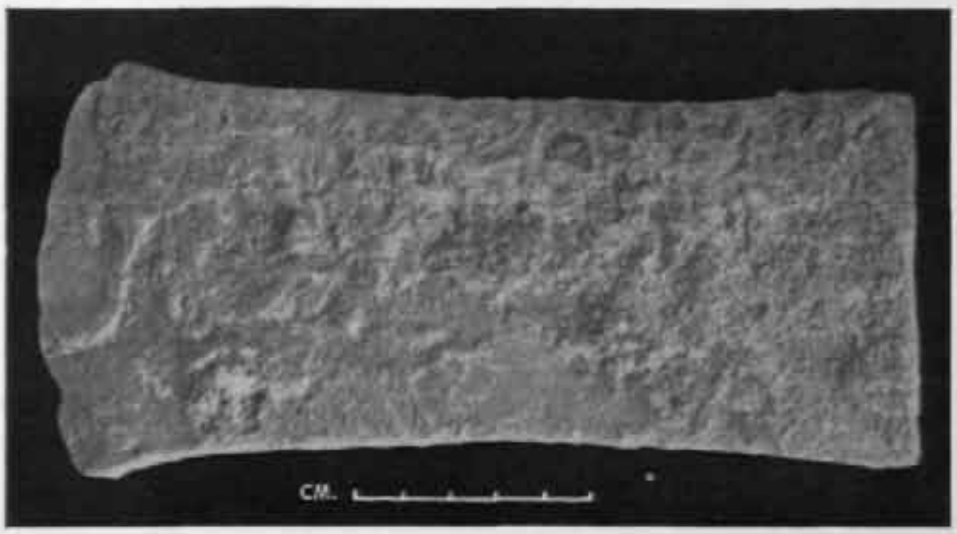


B

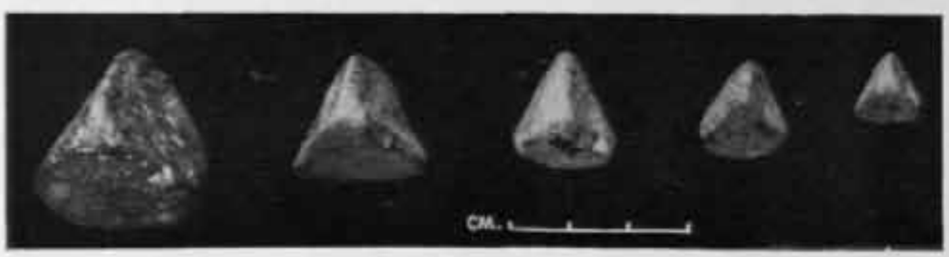
Rajghat : A, *Rouletted ware, Sub-period IC*; B, *pottery jar, with four gold Gupta coins, gold leaves and ornaments.* *See p. 59*



A



B

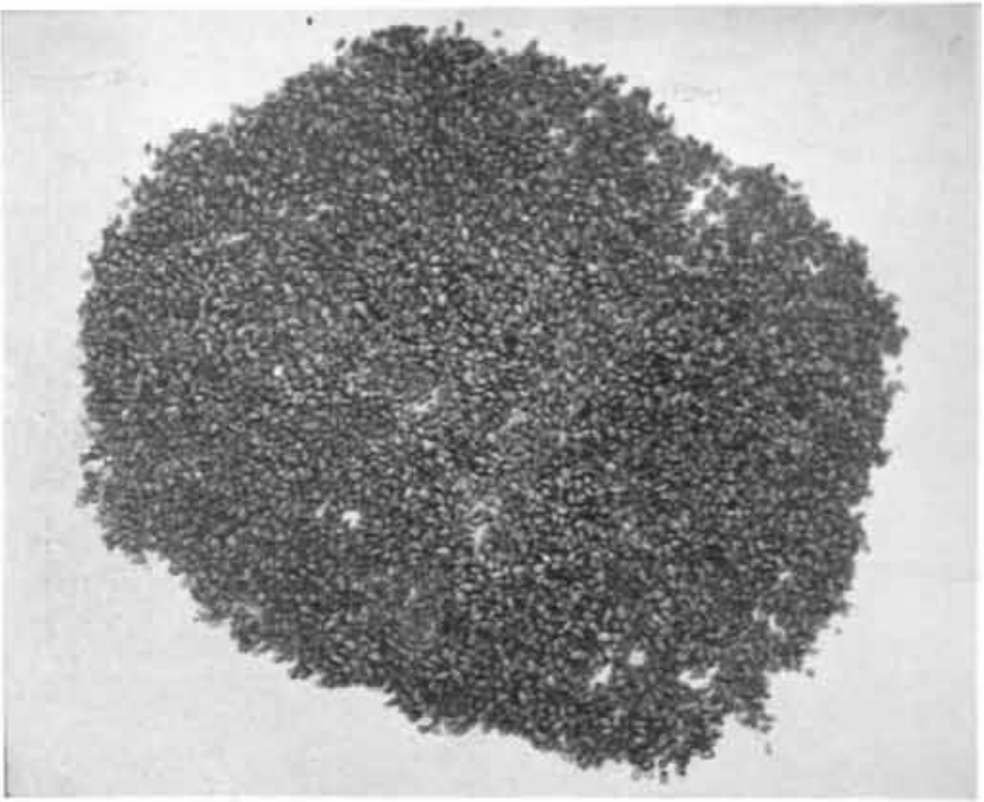


C

Mahisdal : A, *painted black-and-red ware*, B, *copper celt, and* C, *terracotta weights, Period I.* *See p. 60*

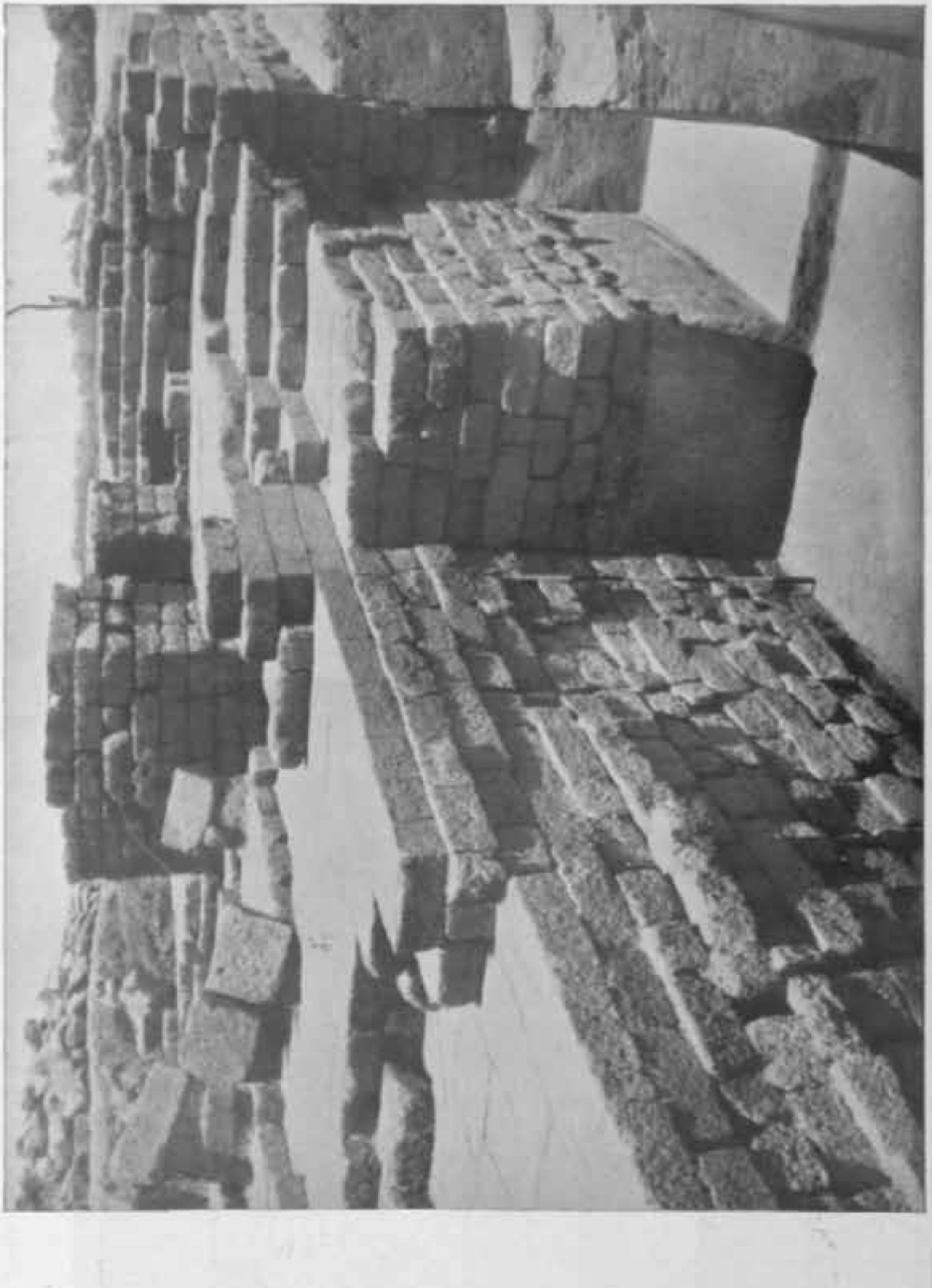


A

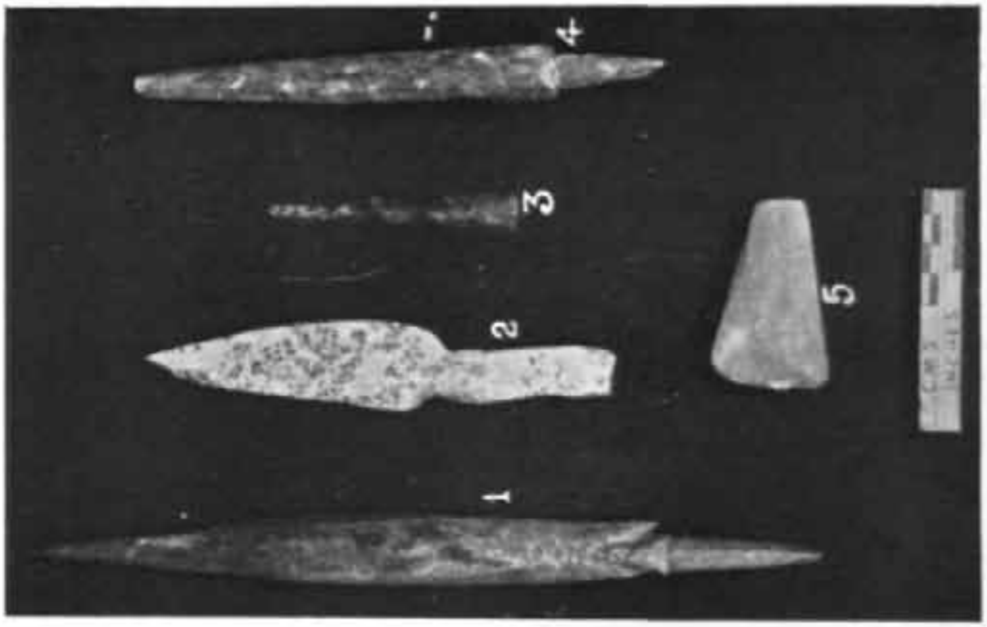


B

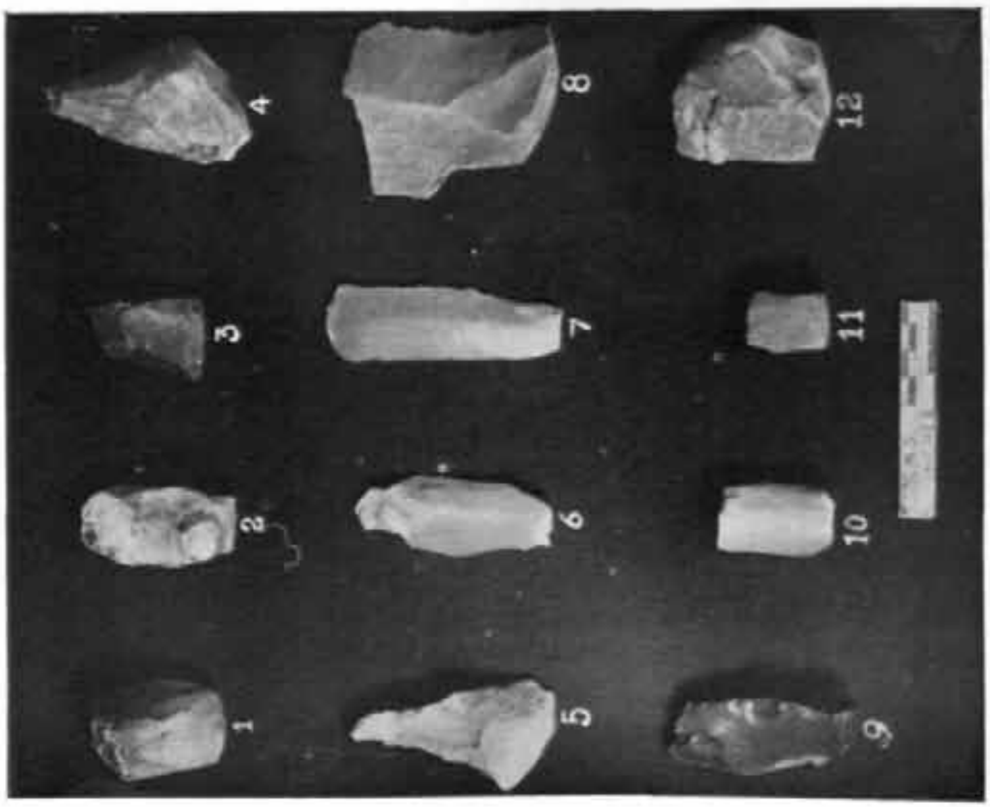
Mahisdal : A, *bone objects, and* B, *charred rice, Period* I. *See p. 60*



Goswamikhanda : laterite structure. *See p. 60*



B



A

Pandu-rajar-dhibi : A, *microlithic tools*, 2, 3 *and* 7-9, *Period II*, 4, 10 *and* 11, *Period III*, 1, 5, 6 *and* 12, *Period IV*; B, *bone-tools and polished celt*, 2-4, *Period II*, 1 *and* 5, *Period IV*. *See p.* 62

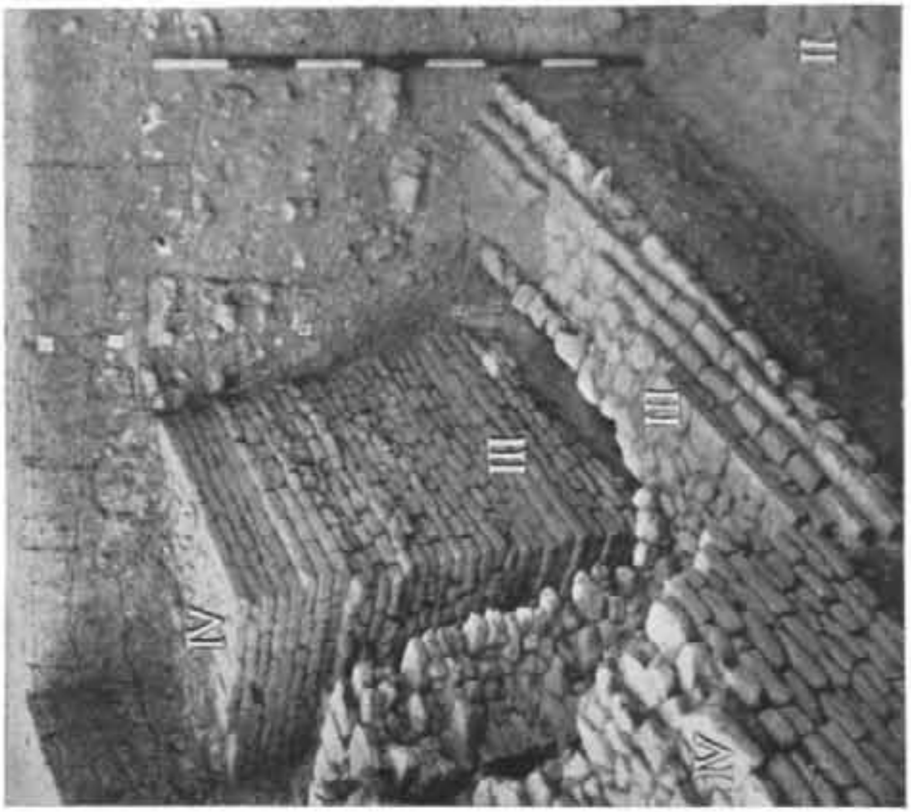


B



A

Pandu-rajar-dhibi: A, *terracotta human head with pointed helmet (ht. 10 cm.) and* B, *terracotta human head (ht. 12 cm.). Period III.* *See p. 62*



B



A

Rajbadidanga : A, *wall with human skull, Phase II;* B, *different structural phases.* *See p. 63*



A



B



C

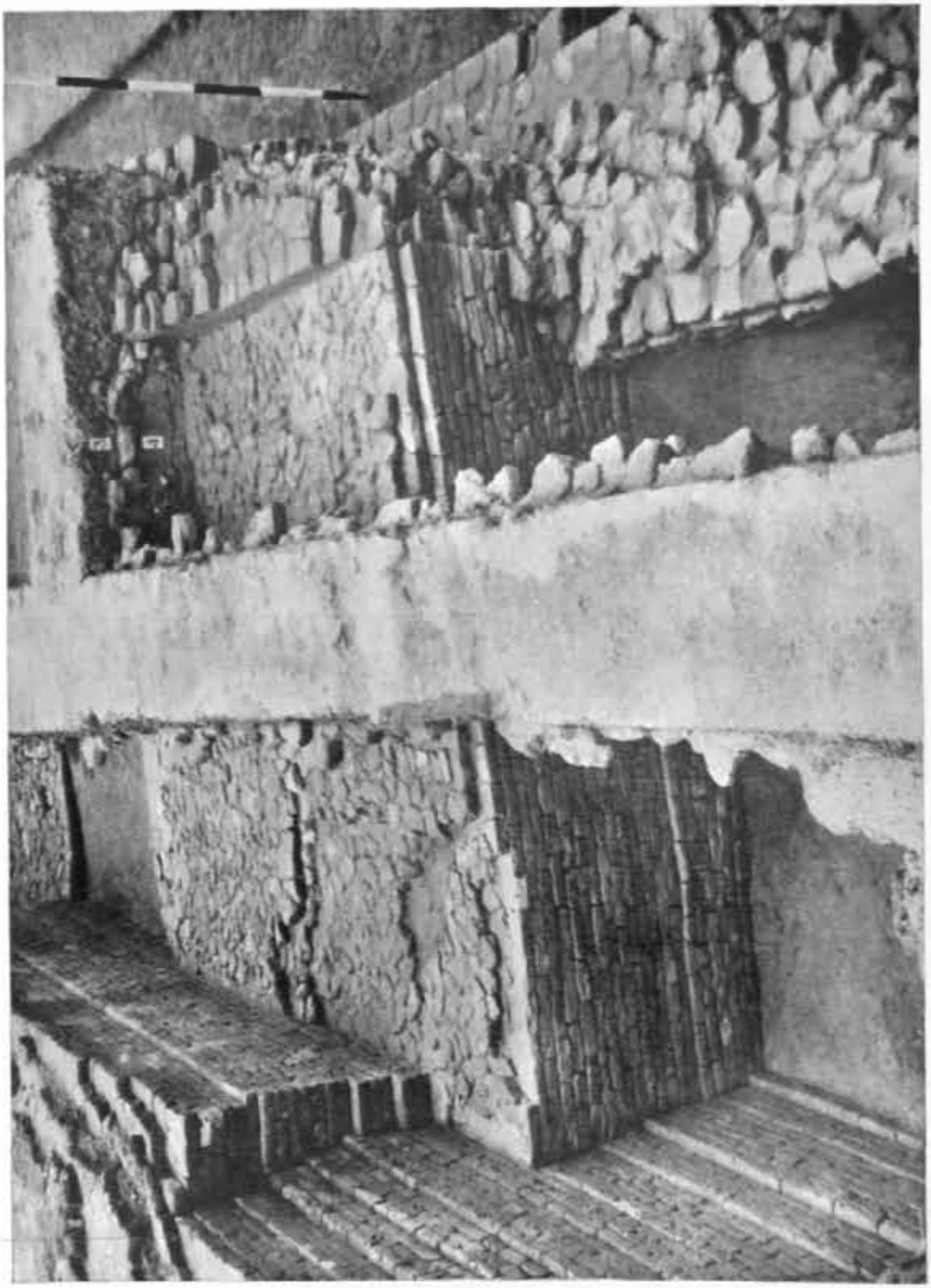


D



E

Rajbadidanga : A, *and* B, *sealing;* C, *mould depicting stupas;* D, *terracotta moulded plaque;* E, *stucco head.* *See p. 63*



Chandraketugarh : massive brick buttress between main temple and outer structure, Period IV. *See p. 64*

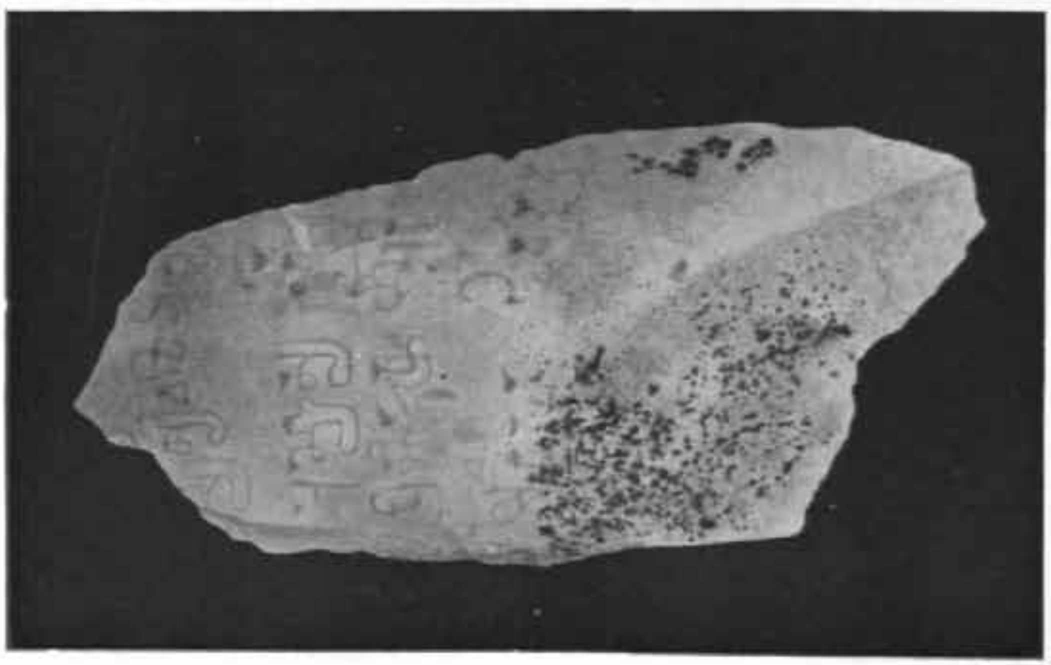


A



B

Chandraketugarh: A, *terracotta plaque showing dancing male figure, Period III;* B, *ritualistic vase, Period V.*
See p. 64



A



B

A, Vidisha : stone inscription; B, Gandhrawal : multi-handed Chakresvari. See pp. 71 and 87

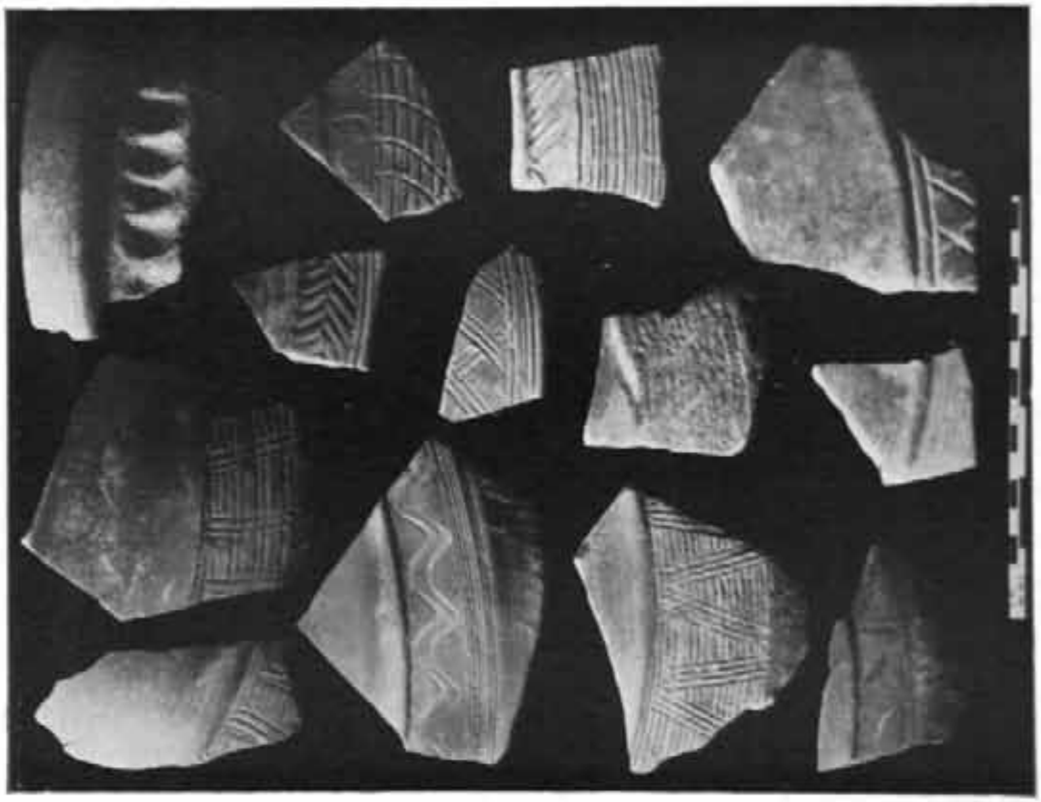


B



A

A. *Bhojpur: udaremukha*; B. *Vidisha : Vishnu* (?) . *See p. 89*



B



A

Madiala-Kalan : A, *painted Harappan pottery*; B, *incised Harappan pottery*. *See p. 91*

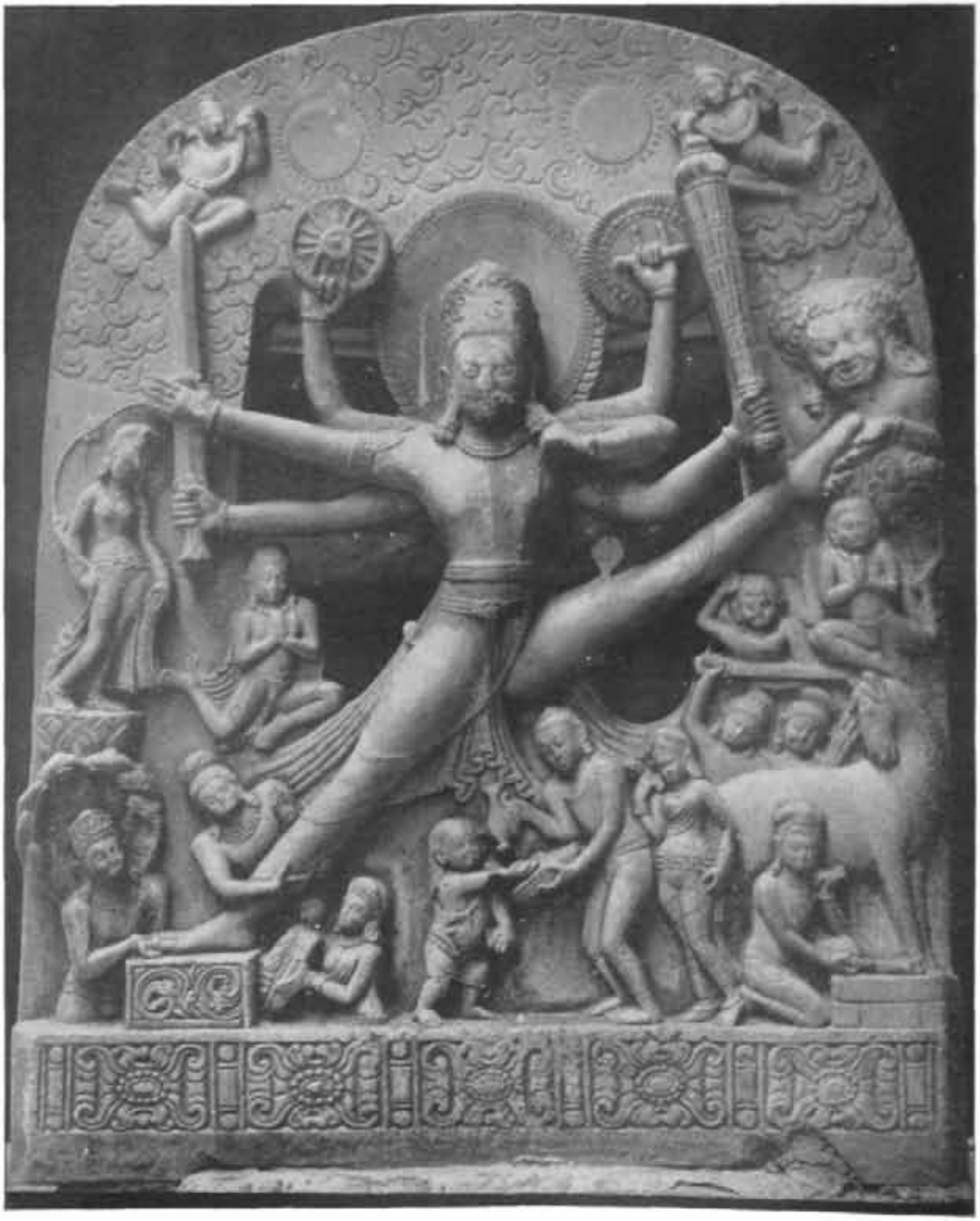


A



B

A, *Mayurbhanj* (?) : *Surya* (*1·22×·63 m.*); B, *Burdwan* : *Mahishamardini* (*39×23 cm.*). *See p. 95*



Chengunarayan (Nepal) : Trivikrama. *See p. 100*



Patan, Kumbhesvara temple (Nepal) : Siva and Parvati on Kailasa. *See p. 100*



B



A

Chengunarayan (Nepal) : A, *Visvarupa;* B, *Vishnu as ardha-nari.* *See p. 100*



A



B

A, *Katmandu (Nepal) Museum : Tara*; B, *Deo-Patan (Nepal) : birth of Buddha.* *See p. 100*



A



B

Katmandu (Nepal) Museum : A, Ekapada-Trimurti; B, Mahisaha-Sambara. See p. 100



A

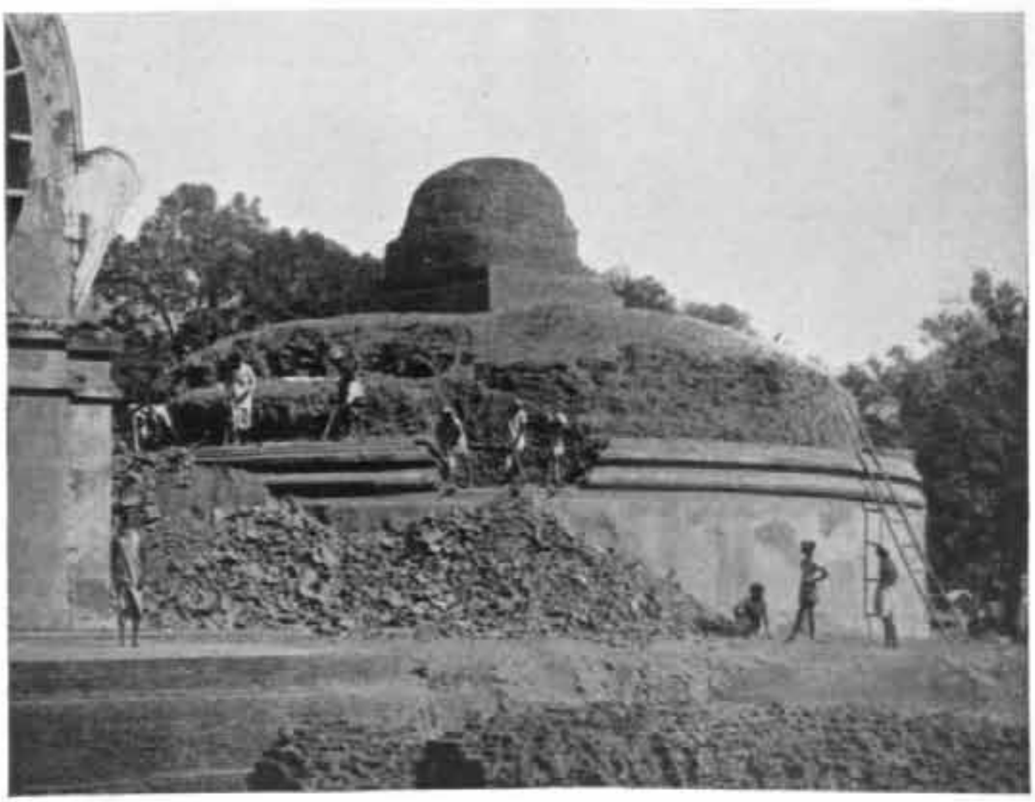


B

Nalanda : Site 12, northern wall of temple, A, *before, and* B, *after conservation.* *See p. 106*



A



B

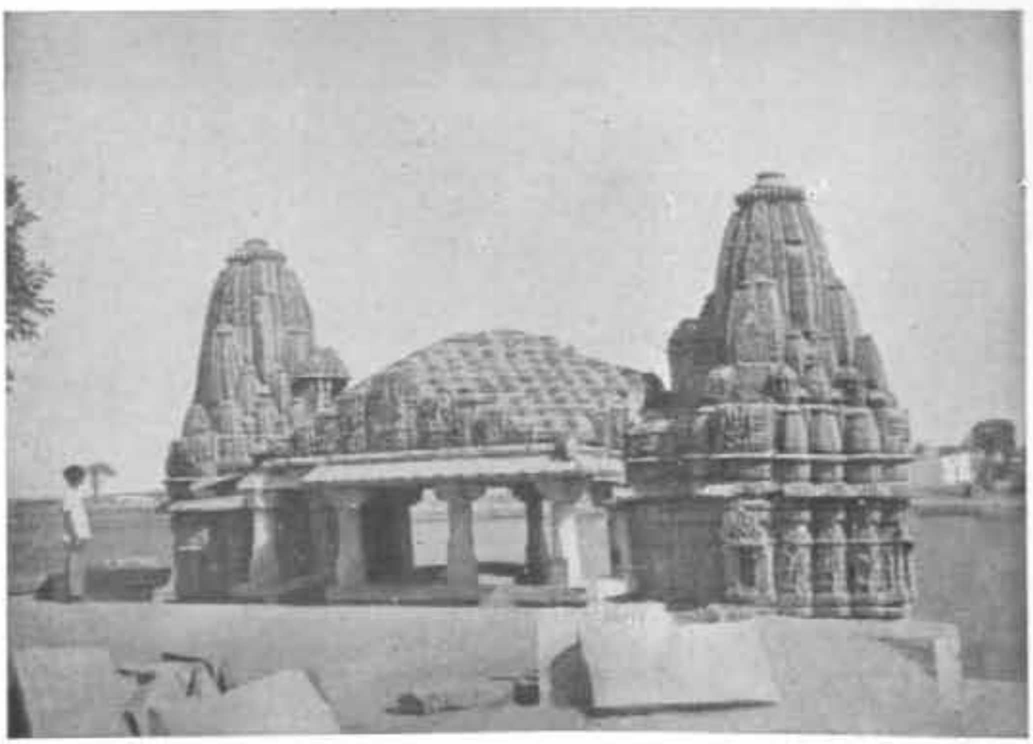
Kusinagara : collapsed Nirvana Stupa, A, *before removal, and* B, *during removal, of débris.* *See p. 107*



Sarnath : image of Buddha inside a votive stupa. *See pp. 92 and 107*



A

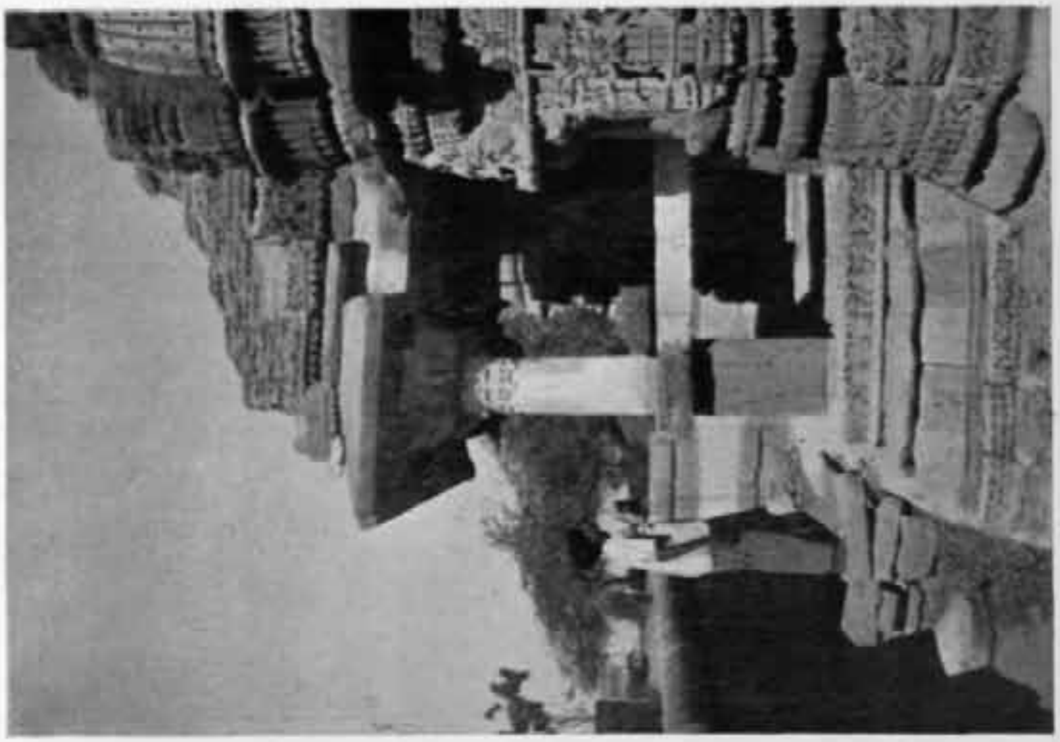


B

Viramgam : Sas temple, A, *before, and* B, *after conservation.* *See p. 116*



A



B

Viramgam : Sas temple, porch, A, *before, and* B, *after conservation.* *See p. 116*



A



B

Cambay: Jami'-Masjid, during conservation. *See p. 117*



A



B

Chitorgarh : fort, Ghee tank, A, *before and* B, *after clearonce.* *See p. 118*



A



B

Polo : Siva temple, A, *before, and* B, *after clearance. See p. 118*



A



B

Bhubaneshwar : Brahmesvara temple, A, *before, and* B, *after chemical treatment.* *See p, 122*



A



B

A, *Konarak : Sun temple, during chemical treatment;* B, *Baijnath : group of temples, during chemical treatment.* *See pp.123 and 124*